Table III

Table III: Human telomerase reverse transcriptase (TERT) Hammerhead Ribozyme and Target Sequence

nt. Position	Ribozyme Sequence	Seq ID Nos.	Substrate Sequence	Seq ID Nos.
13	CGCAGCAG CUGAUGAG X CGAA ACGCAGCG		CGCTGCGT C CTGCTGCG	
68	GCAGCGGG CUGAUGAG X CGAA AGCGCGCG		CGCGCGCT C CCCGCTGC	
90	GCAGCAGG CUGAUGAG X CGAA AGCGCACG		CGTGCGCT C CCTGCTGC	
103	CCUGCGGG CUGAUGAG X CGAA AGUGGCUG		CAGCCACT A CCGCGAGG	
135	GCCGCACG CUGAUGAG X CGAA ACGUGGCC		GGCCACGT T CGTGCGGC	
136	CGCCGCAC CUGAUGAG X CGAA AACGUGGC		GCCACGTT C GTGCGGCG	
194	CGCGCGGA CUGAUGAG X CGAA AGCGCGCG		CGGCGGCT T TCCGCGCG	
195	GCGCGCGG CUGAUGAG X CGAA AAGCCGCC		GGCGGCTT T CCGCGCGC	
196	AGCGCGCG CUGAUGAG X CGAA AAAGCCGC		GCGGCTTT C CGCGCGCT	
264	GGCGGAAG CUGAUGAG X CGAA AGGGGGCG		CGCCCCCT C CTTCCGCC	
267	CCUGGCGG CUGAUGAG X CGAA AGGAGGGG		CCCCTCCT T CCGCCAGG	
268	ACCUGGCG CUGAUGAG X CGAA AAGGAGGG		CCCTCCTT C CGCCAGGT	
279	UCAGGCAG CUGAUGAG X CGAA ACACCUGG		CCAGGTGT C CTGCCTGA	
361	CGAAGCCG CUGAUGAG X CGAA AGGCCAGC		GCTGGCCT T CGGCTTCG	
362	GCGAAGCC CUGAUGAG X CGAA AAGGCCAG		CTGGCCTT C GGCTTCGC	
357	GCAGCGCG CUGAUGAG X CGAA AGCCGAAG		CTTCGGCT T CGCGCTGC	
353	AGCAGCGC CUGAUGAG X CGAA AAGCCGAA		TTCGGCTT C GCGCTGCT	
399	UGGUGGUG CUGAUGAG X CGAA AGGCCUGG		CGAGGCCT T CACCACCA	
400	CUGGUGGU CUGAUGAG X CGAA AAGGCCUC		GAGGCCTT C ACCACCAG	
420	UGGGCAGG CUGAUGAG X CGAA AGCUGCGC		GCGCAGCT A CCTGCCCA	
505	AGCAGGUG CUGAUGAG X CGAA ACCAGCAC		GTGCTGGT T CACCTGCT	
506	CAGCAGGU CUGAUGAG X CGAA AACCAGCA		TGCTGGTT C ACCTGCTG	
509	AGCACAAA CUGAUGAG X CGAA AGCGCGCA		TGCGCGCT C TTTGTGCT	
541	CCAGCACA CUGAUGAG X CGAA AGAGCGCG		CGCGCTCT T TGTGCTGG	
542	ACCAGCAC CUGAUGAG X CGAA AAGAGCGC		GCGCTCTT T GTGCTGGT	
545	GCAGCUGG CUGAUGAG X CGAA AGCCAGCA		TGGTGGCT C CCAGCTGC	
558	ACACCUGG CUGAUGAG X CGAA AGGCGCAG		CTGCGCCT A CCAGGTGT	
580	CGAGCUGG CUGAUGAG X CGAA ACAGCGGC		GCCGCTGT A CCAGCTCG	
589	GCAGCGCC CUGAUGAG X CGAA AGCGUGGUA		TACCAGCT C GGCGCTGC	
602	CCGGGCCU CUGAUGAG X CGAA AGUGGCAG		CTGCCACT C AGGCCCGG	
620	GGGUCCAC CUGAUGAG X CGAA AGCGUGUG		CACACGCT A GTGGACCC	
644	GCAUCCCA CUGAUGAG X CGAA ACGCCUUC		GAAGGCGT C TGGGATGC	
671	CCUGACGC CUGAUGAG X CGAA AUGGUUCC		GGAACCAT A GCGTCAGG	
676	GCCUCCCU CUGAUGAG X CGAA ACGCUAUG		CATAGCGT C AGGGAGGC	
691	CCCAGGGG CUGAUGAG X CGAA ACCCCGGC		GCCGGGGT C CCCCTGGG	
749	CAACGGCA CUGAUGAG X CGAA ACUUCGGC		GCCGAAGT C TGCCGTTG	
756	UCUUCGGC CUGAUGAG X CGAA ACGGCAGA		TCTGCCGT T GCCCAAGA	
808	CCCUGCCC CUGAUGAG X CGAA ACGGGCGU		ACGCCCGT T GGGCAGGG	
819	GGGCCCAG CUGAUGAG X CGAA ACCCCGGC		GCAGGGGT C CCGGGCCC	
863	CACACAGA CUGAUGAG X CGAA ACCACGGU		ACCGTGGT T TGTGTGTG	
864	CCACACAG CUGAUGAG X CGAA AACCACGG		CCGTGGTT T CTGTGTGG	
865	ACCACACA CUGAUGAG X CGAA AAACCACG		CGTGGTTT C TGTGTGGT	
876	UGGCAGGU CUGAUGAG X CGAA ACACCACA		TGTGGTGT C ACCTGCCA	

906	CCUCCAAA CUGAUGAG X CGAA AGGUGGCU		AGCCACCT C TTTGGAGG	
908	ACCCUCCA CUGAUGAG X CGAA AGAGGUGG		CCACCTCT T TGGAGGGT	
909	CACCCUCC CUGAUGAG X CGAA AAGAGGUG		CACCTCTT T GGAGGGTG	
922	GUGCCAGA CUGAUGAG X CGAA AGCCCACC		GGTGCGCT G TCTGGCAC	
924	GCGUGCCA CUGAUGAG X CGAA AGAGCCCA		TGCGCTCT C TGGCACGC	
939	AUGGGUGG CUGAUGAG X CGAA AGUGGCGC		GGGCCACT C CCACCCAT	
943	GGCCCAGG CUGAUGAG X CGAA AUGGGUGG		CCACCCAT C CGTGGGCC	
981	GCGAUGUG CUGAUGAG X CGAA AUGGGGGG		CCCCCCAT C CACATCGC	
987	GUGGCCGC CUGAUGAG X CGAA AUGUGGAU		ATCCACAT C GCGGCCAC	
1001	GUCCAGG CUGAUGAG X CGAA ACGUGGUG		CACCACGT C CCTGGGAC	
1016	CGGGGGAC CUGAUGAG X CGAA AGGCGUGU		ACACGCCT T GTCCCCCG	
1019	CACCGGGG CUGAUGAG X CGAA ACAAGGCG		CGCCTTGT C CCCCGGTG	
1029	UCCUGGCG CUGAUGAG X CGAA ACACCCGG		CCCGGTGT A CCGCGAGA	
1047	AGUAGAGG CUGAUGAG X CGAA AGUGCUUG		CAAGCACT T CCTCTACT	
1048	GAGUAGAG CUGAUGAG X CGAA AAGUGCUU		AAGCACTT C CTCTACTC	
1051	GAGGAGUA CUGAUGAG X CGAA AGGAAGUG		CACTTCCT C TACTCCTC	
1052	CUGAGGAG CUGAUGAG X CGAA AGAGGAAG		CTTCCTCT A CTCCTCAG	
1056	CGGCUGAG CUGAUGAG X CGAA AGUAGAGG		CCTCTACT C CTCAGGCG	
1059	UGUGGCCU CUGAUGAG X CGAA AGGAGUAG		CTACTCCT C AGGCGACA	
1086	GUAGGAAG CUGAUGAG X CGAA AGGGCCGC		GCGGCCCT C CTTCCTAC	
1089	UGAGUAGG CUGAUGAG X CGAA AGGAGGGC		GCCCTCCT T CCTACTCA	
1090	CUGAGUAG CUGAUGAG X CGAA AAGGAGGG		CCCTCCTT C CTACTCAG	
1092	GAGCUGAG CUGAUGAG X CGAA AGGAAGGA		TCCTTCCT A CTCAGCTC	
1096	AGAGAGCU CUGAUGAG X CGAA AGUAGGAA		TTCCTACT C AGCTCTCT	
1101	GCCUCAGA CUGAUGAG X CGAA AGCUGAGU		ACTCAGCT C TCTGAGGC	
1102	GGGCCUCA CUGAUGAG X CGAA AGAGCUGA		TCAGCTCT C TGAGGCCC	
1127	GAGCCUCC CUGAUGAG X CGAA AGCGCCAG		CTGGCGCT C GGAGGCTC	
1135	GUCUCCAC CUGAUGAG X CGAA AGCCUCCG		CGGAGGCT C GTGGAGAC	
1147	CCCAGAAA CUGAUGAG X CGAA AUGGUCUC		GAGACCAT C TTTCTGGG	
1149	AACCCAGA CUGAUGAG X CGAA AGAUGGUC		GACCATCT T TCTGGGTT	
1150	GAACCCAG CUGAUGAG X CGAA AAGAUGGU		ACCATCTT T CTGGGTTC	
1151	GGAACCCA CUGAUGAG X CGAA AAAGAUGG		CCATCTTT C TGGGTTCC	
1157	GGGCCUGG CUGAUGAG X CGAA ACCCAGAA		TTCTGGGT T CCAGGCCC	
1158	AGGGCCUG CUGAUGAG X CGAA AACCCAGA		TCTGGGTT C CAGGCCCT	
1181	CCUGCGGG CUGAUGAG X CGAA AGUCCCUG		CAGGGACT C CCCGCAGG	
1191	GGCGGCGC CUGAUGAG X CGAA ACCUGCGG		CCGCAGGT T GCCCCGCC	
1212	UUUGCCAG CUGAUGAG X CGAA AGCGCUGG		CCAGCGCT A CTGGCAAA	
1233	GCCUCCAGA CUGAUGAG X CGAA ACAGGGGC		GCCCCTGT T TCTGGAGC	
1234	AGCUCCAG CUGAUGAG X CGAA AACAGGGG		CCCCTGTT T CTGGAGCT	
1235	CAGCUCCA CUGAUGAG X CGAA AAACAGGG		CCCTGTTT C TGGAGCTG	
1246	UGGUUCCC CUGAUGAG X CGAA AGCAGCUC		GAGCTGCT T GGGAACCA	
1269	GCACCCCG CUGAUGAG X CGAA AGGGGCAC		GTGCCCCT A CGGGGTGC	
1279	GUCUUGAG CUGAUGAG X CGAA AGCACCCC		GGGGTGCT G CTCAAGAC	
1282	UGCGUCUU CUGAUGAG X CGAA AGGAGCAC		GTGCTCCT C AAGACGCA	
1313	GCUGGGGU CUGAUGAG X CGAA ACCCCAGC		GCTGCGGT C ACCCCAGC	
1330	CGGGCACA CUGAUGAG X CGAA ACACCGGC		GCCGGTGT C TGTGCCCG	
1356	CCGCCACA CUGAUGAG X CGAA AGCCCUGG		CCAGGGCT C TGTGGCGG	

1394	CACCAGGC CUGAUGAG X CGAA ACGGGGGU		ACCCCGT C GCCTGGTG	
1411	UGCUGGCG CUGAUGAG X CGAA AGCAGCUG		CAGCTGCT C CGCCAGCA	
1440	CGAAGCCG CUGAUGAG X CGAA ACACCUGC		GCAGGTGT A CGGCTTCG	
1446	CCCGGCAC CUGAUGAG X CGAA AGCCGUAC		GTACGGCT T CGTGCCGG	
1447	GCCCGCAC CUGAUGAG X CGAA AAGCCGUA		TACGGCTT C GTGCGGGC	
1486	GAGCCCCA CUGAUGAG X CGAA AGGCCUGG		CCAGGCCT C TGGGGCTC	
1494	UGUGCCUG CUGAUGAG X CGAA AGCCCCAG		CTGGGGCT C CAGGCACA	
1515	UCCUGAGG CUGAUGAG X CGAA AGCGGCGU		ACGCCGCT T CCTCAGGA	
1516	UUCCUGAG CUGAUGAG X CGAA AAGCGGCG		CGCCGCTT C CCAGGAA	
1519	GUGUUCCU CUGAUGAG X CGAA AGGAAGCG		CGCTTCCT C AGGAACAC	
1536	GGGAGAUG CUGAUGAG X CGAA ACUUCUUG		CAAGAAGT T CATCTCCC	
1537	AGGGAGAU CUGAUGAG X CGAA AACUUCUU		AAGAAGTT C ATCTCCCT	
1540	CCCAGGGA CUGAUGAG X CGAA AUGAACUU		AAGTTCAT C TCCCTGGG	
1542	UCCCCAGG CUGAUGAG X CGAA AGAUGAAC		GTTCATCT C CCTGGGGA	
1564	UGCAGCGA CUGAUGAG X CGAA AGCUUGGC		GCCAAGCT C TGCTGCA	
1566	CCUGCAGC CUGAUGAG X CGAA AGAGCUUG		CAAGCTCT C GCTGCAGG	
1610	GCGCAGCC CUGAUGAG X CGAA AGCGCAGU		ACTGCGCT T GGCTGCGC	
1633	ACACAGCC CUGAUGAG X CGAA ACCCCUGG		CCAGGGGT T GGCTGTGT	
1642	GCGGCCGG CUGAUGAG X CGAA ACACAGCC		GGCTGTGT T CCGGCCGC	
1643	UGCGGCCG CUGAUGAG X CGAA AACACAGC		GCTGTGTT C CGGCCGCA	
1661	CUGACGCA CUGAUGAG X CGAA ACGGUGCU		AGCACCGT C TGCGTCAG	
1679	UUGGCCAG CUGAUGAG X CGAA AUCUCCUC		GAGGAGAT C CTGGCCAA	
1686	AGUGCAGG CUGAUGAG X CGAA ACUUGGCC		GGCCAAGT T CCTGCACT	
1687	CAGUGCAG CUGAUGAG X CGAA AACUUGGC		GCCAAGTT C CTGCACTG	
1710	CGACGACG CUGAUGAG X CGAA ACACACUC		GAGTGTGT A CGTCGTCG	
1714	AGCUCGAC CUGAUGAG X CGAA ACGUACAC		GTGTACGT C GTCGAGCT	
1717	AGCAGCUC CUGAUGAG X CGAA ACGACGUA		TACGTCGT C GAGCTGCT	
1726	AAAGACCU CUGAUGAG X CGAA AGCAGCUC		GAGCTGCT C AGGTCTTT	
1731	AAAAGAAA CUGAUGAG X CGAA ACCUGAGC		GCTCAGGT C TTTCTTTT	
1733	AUAAAAGA CUGAUGAG X CGAA AGACCUGA		TCAGGTCT T TCTTTTAT	
1734	CAUAAAAG CUGAUGAG X CGAA AAGACCUG		CAGGTCTT T CTTTTATG	
1736	ACAUAAAA CUGAUGAG X CGAA AAAGACCU		AGGTCTTT C TTTTATGT	
1737	UGACAUAA CUGAUGAG X CGAA AGAAAGAC		GTCTTTCT T TTATGTCA	
1738	GUGACAUA CUGAUGAG X CGAA AAGAAAGA		TCTTTCTT T TATGTCAC	
1739	CGUGACAU CUGAUGAG X CGAA AAAGAAAG		CTTTCTTT T ATGTCACG	
1740	CCGUGACA CUGAUGAG X CGAA AAAAGAAA		TTTCTTTT A TGTCACGG	
1744	GUCUCCGU CUGAUGAG X CGAA ACAUAAAA		TTTTATGT C ACGGAGAC	
1758	UCUUUUGA CUGAUGAG X CGAA ACGUGGUC		GACCACGT T TCAAAAGA	
1759	UUCUUUUG CUGAUGAG X CGAA AACGUGGU		ACCACGTT C AAAAGAA	
1760	GUUCUUUU CUGAUGAG X CGAA AAACGUGG		CCACGTTT C AAAAGAAC	
1774	UAGAAAAA CUGAUGAG X CGAA AGCCUGUU		AACAGGCT C TTTTTCTA	
1776	GGUAGAAA CUGAUGAG X CGAA AGAGCCUG		CAGGCTCT T TTTCTACC	
1777	CGGUAGAA CUGAUGAG X CGAA AAGAGCCU		AGGCTCTT T TTCTACCG	
1778	CCGGUAGA CUGAUGAG X CGAA AAAGAGCC		GGCTCTTT T TCTACCGG	
1779	UCCGGUAG CUGAUGAG X CGAA AAAAGAGC		GCTCTTTT T CTACCGGA	
1780	UUCCGGUA CUGAUGAG X CGAA AAAAAGAG		CTCTTTTT C TACCGGAA	
1782	UCUUCCGG CUGAUGAG X CGAA AGAAAAAG		CTTTTTCT A CCGGAAGA	

Table III

1795	UUGCUCCA CUGAUGAG X CGAA ACACUCUU		AAGAGTGT C TGGAGCAA	
1806	UGCUUUGC CUGAUGAG X CGAA ACUUGCUC		GAGCAAGT T GCAAAGCA	
1816	CUGAUUCC CUGAUGAG X CGAA AUGCUUUG		CAAAGCAT T GGAATCAG	
1822	UGCUGUCU CUGAUGAG X CGAA AUUCCAAU		ATTGGAAT C AGACAGCA	
1833	CCCUUUUC CUGAUGAG X CGAA AGUCUGU		ACAGCACT T GAAGAGGG	
1850	CUGCUUCC CUGAUGAG X CGAA ACAGCUCC		GGAGCTGT C GGAAGCAG	
1875	UGCUCCCU CUGAUGAG X CGAA ACCUCUGC		GCAGAGGT C AGGCAGCA	
1895	GGCUUCCC CUGAUGAG X CGAA AUGCUGCC		GGCAGCAT C GGGAAGCC	
1911	GGAGUCUG CUGAUGAG X CGAA ACGUCAGC		GCTGACGT C CAGACTCC	
1918	AUGAAGCC CUGAUGAG X CGAA AGUCUGGA		TCCAGACT C CGCTTCAT	
1923	UGGGGAUG CUGAUGAG X CGAA AGCGGAGU		ACTCCGCT T CATCCCA	
1924	UUGGGGAU CUGAUGAG X CGAA AAGCGGAG		CTCCGCTT C ATCCCAA	
1927	GGCUUGGG CUGAUGAG X CGAA AUGAAGCG		CGCTTCAT C CCCAAGCC	
1954	AUGUUCAC CUGAUGAG X CGAA AUCGGCCG		CGGCCGAT T GTGAACAT	
1968	CCAGCACG CUGAUGAG X CGAA AGUCCAUG		CATGGACT A CGTCGTGG	
1972	GCUCCCAC CUGAUGAG X CGAA ACGUAGUC		GACTACGT C GTGGGAGC	
1989	CUCUGCGG CUGAUGAG X CGAA ACGUUCUG		CAGAACGT T CCGCAGAG	
1990	UCUCUGCG CUGAUGAG X CGAA AACGUUCU		AGAACGTT C CGCAGAGA	
2015	CGAGGUGA CUGAUGAG X CGAA ACCGUCGG		CCGACGGT C TCACCTCG	
2017	CUGAGGGU CUGAUGAG X CGAA AGACCGUC		GACGGTCT C ACCTCGAG	
2022	UCACCCUC CUGAUGAG X CGAA AGGUGAGA		TCTCACCT C GAGGGTGA	
2040	GCACGCUG CUGAUGAG X CGAA ACAGCGCC		GGCACTGT T CAGCGTGC	
2041	AGCACGCU CUGAUGAG X CGAA AACAGCGC		GCACTGTT C AGCGTGCT	
2050	UCGUAGUU CUGAUGAG X CGAA AGCACGCU		AGCGTGCT C AACTACGA	
2069	CCCGCUCG CUGAUGAG X CGAA AGUUGAGC		GCTCAACT A CGAGCGGG	
2080	GCGCCCAG CUGAUGAG X CGAA AGGCCGGG		CCCGGCCT C CTGGGCGC	
2081	CCAGCACA CUGAUGAG X CGAA AGGCCGCC		GGCGGCCT C TGTGCTGG	
2111	CCUGUGGA CUGAUGAG X CGAA AUCGUCCA		TGGACGAT A TCCACAGG	
2113	GCCCUGUG CUGAUGAG X CGAA AUAUCGUC		GACGATAT C CACAGGGC	
2153	GCAGCACG CUGAUGAG X CGAA AGGUGCGC		GCGCACCT T CGTGCTGC	
2154	CGCAGCAC CUGAUGAG X CGAA AAGGUGCG		CGCACCTT C GTGCTGCG	
2175	UGACAAAG CUGAUGAG X CGAA ACAGCUCA		TGAGCTGT A CTTTGTCA	
2178	CCUUGACA CUGAUGAG X CGAA AGUACAGC		GCTGTACT T TGTCAAGG	
2179	ACCUUGAC CUGAUGAG X CGAA AAGUACAG		CTGTACTT T GTCAAGGT	
2182	UCCACCUU CUGAUGAG X CGAA ACAAAGUA		TACTTTGT C AAGGTGGA	
2209	UGGUGUCG CUGAUGAG X CGAA ACGCGCCC		GGGCGCGT A CGACACCA	
2215	UCCUGGGG CUGAUGAG X CGAA AUGGUGUC		GACACCAT C CCCCAGGA	
2230	ACCUCCGU CUGAUGAG X CGAA AGCCUGUC		GACAGGCT C ACGGAGGT	
2239	CUGGCGAU CUGAUGAG X CGAA ACCUCCGU		ACGGAGGT C ATCGCCAG	
2241	AUGCUGGC CUGAUGAG X CGAA AUGACCUC		GAGGTCAT C GCCAGCAT	
2251	GGUUUGAU CUGAUGAG X CGAA AUGCUGGC		GCCAGCAT C ATCAAACC	
2254	UGGGGUUU CUGAUGAG X CGAA AUGAUGCU		AGCATCAT C AAACCCCA	
2271	GCACGCAG CUGAUGAG X CGAA ACGUGUUC		GAACACGT A CTGCGTGC	
2282	GGCAUACC CUGAUGAG X CGAA ACGCACGC		GCGTGCGT C GGTATGCC	
2286	CCACGGCA CUGAUGAG X CGAA ACCGACGC		GCGTCGGT A TGCCGTGG	
2296	GCCUUCUG CUGAUGAG X CGAA ACCACGGC		GCCGTGGT C CAGAAGGC	
2320	GCCUUGCG CUGAUGAG X CGAA ACGUGCCC		GGGCACGT C CGCAAGGC	

2331	GGCUCUUG CUGAUGAG X CGAA AGGCCUUG		CAAGGCCT T CAAGAGCC	
2332	UGGCUCUU CUGAUGAG X CGAA AAGGCCUU		AAGGCCTT C AAGAGCCA	
2344	AAGGUAGA CUGAUGAG X CGAA ACGUGGCU		AGCCACGT C TCTACCTT	
2346	UCAAGGUA CUGAUGAG X CGAA AGACGUGG		CCACGTCT C TACCTTGA	
2348	UGUCAAGG CUGAUGAG X CGAA AGAGACGU		ACGTCTCT A CCTTGACA	
2352	GGUCUGUC CUGAUGAG X CGAA AGGUAGAG		CTCTACCT T GACAGACC	
2362	UACGGCUG CUGAUGAG X CGAA AGGUCUGU		ACAGACCT C CAGCCGTA	
2370	GUCGGCAUG CUGAUGAG X CGAA ACGGCUGG		CCAGCCGT A CATGCCAC	
2382	GAGCCACG CUGAUGAG X CGAA ACUGUCGC		GCGACAGT T CGTGGCTC	
2383	UGAGCCAC CUGAUGAG X CGAA AACUGUCG		CGACAGTT C GTGGCTCA	
2390	CUGCAGGU CUGAUGAG X CGAA AGCCACGA		TCGTGGCT C ACCTGCAG	
2425	UCGAUGAC CUGAUGAG X CGAA ACGGCAUC		GATGCCGT C GTCATCGA	
2428	UGCUCGAU CUGAUGAG X CGAA ACGACGGC		GCCGTCGT C ATCGAGCA	
2441	CUCUUGCUC CUGAUGAG X CGAA AUGACGAC		GTCGTCAT C GAGCAGAG	
2442	UCAGGGAG CUGAUGAG X CGAA AGCUCUGC		GCAGAGCT C GTCCCTGA	
2445	CAUUCAGG CUGAUGAG X CGAA AGGAGCUC		GAGCTCCT C CCTGAATG	
2470	ACGUCGAA CUGAUGAG X CGAA AGGCCACU		AGTGGCCT C TTCGACGT	
2472	AGACGUCG CUGAUGAG X CGAA AGAGGCCA		TGGCCTCT T CGACGTCT	
2473	AAGACGUC CUGAUGAG X CGAA AAGAGGCC		GGCCTCTT C GACGTCTT	
2479	CGUAGGAA CUGAUGAG X CGAA ACGUCGAA		TTCGACGT C GTCCTACG	
2481	AGCGUAGG CUGAUGAG X CGAA AGACGUCG		CGACGTCT T CCTACGCT	
2482	AAGCGUAG CUGAUGAG X CGAA AAGACGUC		GACGTCTT C CTACGCTT	
2485	AUGAAGCG CUGAUGAG X CGAA AGGAAGAC		GTCTTCCT A CGCTTCAT	
2490	GGCACAUG CUGAUGAG X CGAA AGCGUAGG		CCTACGCT T CATGTGCC	
2491	UGGCACAU CUGAUGAG X CGAA AAGCGUAG		CTACGCTT C ATGTGCCA	
2515	UUGCCCCU CUGAUGAG X CGAA AUGCGCAC		GTGCGCAT C AGGGGCAA	
2526	GGACGUAG CUGAUGAG X CGAA ACUUGCCC		GGGCAAGT C CTACGTCC	
2529	ACUGGACG CUGAUGAG X CGAA AGGACUUG		CAAGTCCT A CGTCCAGT	
2533	UGGCACUG CUGAUGAG X CGAA ACGUAGGA		TCCTACGT C CAGTGCCA	
2548	CCCUUGCGG CUGAUGAG X CGAA AUCCCCUG		CAGGGGAT C CCGCAGGG	
2559	AGAGGAUG CUGAUGAG X CGAA AGCCCCUGC		GCAGGGCT C CATCCTCT	
2563	GUGGAGAG CUGAUGAG X CGAA AUGGAGCC		GGCTCCAT C TCTCCAC	
2566	AGCGUGGA CUGAUGAG X CGAA AGGAUGGA		TCCATCCT C TCCACGCT	
2568	GCAGCGUG CUGAUGAG X CGAA AGAGGAUG		CATCCTCT C CACGCTGC	
2578	AGGCUGCA CUGAUGAG X CGAA AGCAGCGU		ACGCTGCT C TGCAGCCT	
2592	UGUCGCCG CUGAUGAG X CGAA AGCACAGG		CCTGTGCT A CGGCGACA	
2616	UCCCCGCA CUGAUGAG X CGAA ACAGCUUG		CAAGCTGT T TGCGGGGA	
2617	AUCCCCGC CUGAUGAG X CGAA AACAGCUU		AAGCTGTT T GCGGGGAT	
2626	UCCCCGCC CUGAUGAG X CGAA AUCCCCGC		GCGGGGAT T CGGCGGGA	
2627	GUCCCGCC CUGAUGAG X CGAA AAUCCCCG		CGGGGATT C GGCGGGAC	
2644	AAACGCAG CUGAUGAG X CGAA AGCAGCCC		GGGCTGCT C CTGCGTTT	
2651	AUCCACCA CUGAUGAG X CGAA ACGCAGGA		TCCTGCGT T TGGTGGAT	
2652	CAUCCACC CUGAUGAG X CGAA AACGCAGG		CCTGCGTT T GGTGGATG	
2663	CAACAAGA CUGAUGAG X CGAA AUCAUCCA		TGGATGAT T TCTTGTTG	
2664	CCAACAAG CUGAUGAG X CGAA AAUCAUCC		GGATGATT T CTTGTTGG	
2665	ACCAACAA CUGAUGAG X CGAA AAAUCAUC		GATGATTT C TTGTTGGT	
2667	UCACCAAC CUGAUGAG X CGAA AGAAAUCA		TGATTTCT T GTTGGTGA	

2670	GUGUCACC CUGAUGAG X CGAA ACAAGAAA		TTTCTTGT T GGTGACAC	
2681	GGUGAGGU CUGAUGAG X CGAA AGGUGUCA		TGACACCT C ACCTCACC	
2686	GCGUGGGU CUGAUGAG X CGAA AGGUGAGG		CCTCACCT C ACCCACGC	
2703	UCCUGAGG CUGAUGAG X CGAA AGGUUUUC		GAAAACCT T CCTCAGGA	
2704	GUCCUGAG CUGAUGAG X CGAA AAGGUUUU		AAAACCTT C CTCAGGAC	
2707	AGGGUCCU CUGAUGAG X CGAA AGGAAGGU		ACCTTCCT C AGGACCCT	
2710	ACACCUCG CUGAUGAG X CGAA ACCAGGGU		ACCCTGGT C CGAGGTGT	
2723	UACUCAGG CUGAUGAG X CGAA ACACCUCG		CGAGGTGT C CCTGAGTA	
2735	CGCAGCCA CUGAUGAG X CGAA ACUCAGGG		CCCTGAGT A TGGCTGCG	
2764	UCUUCCGC CUGAUGAG X CGAA AGUUCACC		GGTGAACT G GCGGAAGA	
2775	CUACAGGG CUGAUGAG X CGAA AGUUCACC		GGTGAACT T CCCTGTAG	
2776	UCUACAGG CUGAUGAG X CGAA AAGUUCAC		GTGAACTT C CCTGTAGA	
2782	UCGUCUUC CUGAUGAG X CGAA ACAGGAA		TTCCTGT A GAAGACGA	
2819	CUGAACAA CUGAUGAG X CGAA AGCCGUGC		GCACGGCT T TTGTTCAG	
2811	UCUGAACA CUGAUGAG X CGAA AAGCCGUG		CACGGCTT T TGTTCAGA	
2812	AUCUGAAC CUGAUGAG X CGAA AAAGCCGU		ACGGCTTT T GTTCAGAT	
2815	GGCAUCUG CUGAUGAG X CGAA ACAAAAGC		GCTTTTGT T CAGATGCC	
2816	CGGCAUCU CUGAUGAG X CGAA AACAAAAG		CTTTTGTT C AGATGCCG	
2836	CAGGGGAA CUGAUGAG X CGAA AGGCCGUG		CACGGCCT A TTCCCCTG	
2838	ACCAGGGG CUGAUGAG X CGAA AUAGGCCG		CGGCCTAT T CCCCTGGT	
2839	CACCAGGG CUGAUGAG X CGAA AAUAGGCC		GGCCTATT C CCCTGGTG	
2864	GGUCCGGG CUGAUGAG X CGAA AUCCAGCA		TGCTGGAT A CCCGGACC	
2892	AGCUGGAG CUGAUGAG X CGAA AGUCGCUC		GAGCGACT A CTCCAGCT	
2896	CAUAGCUG CUGAUGAG X CGAA AGUAGUCG		CGACTACT C CAGCTATG	
2902	UCCCGGCA CUGAUGAG X CGAA AGCUGGAG		CTCCAGCT A TGCCCGGA	
2913	CUCUGAUG CUGAUGAG X CGAA AGGUCCGG		CCGGACCT C CATCAGAG	
2917	CUGGCUCU CUGAUGAG X CGAA AUGGAGGU		ACCTCCAT C AGAGCCAG	
2927	GAAGGUGA CUGAUGAG X CGAA ACUGGCUC		GAGCCAGT C TCACCTTC	
2929	UUGAAGGU CUGAUGAG X CGAA AGACUGGC		GCCAGTCT C ACCTTCAA	
2934	CGCGGUUG CUGAUGAG X CGAA AGGUGAGA		TCTCACCT T CAACCGCG	
2935	CCGCGGUU CUGAUGAG X CGAA AAGGUGAG		CTCACCTT C AACCGCGG	
2946	CAGCCUUG CUGAUGAG X CGAA AGCCGCGG		CCGCGGCT T CAAGGCTG	
2947	CCAGCCUU CUGAUGAG X CGAA AAGCCGCG		CGCGGCTT C AAGGCTGG	
2969	GAGUUUGC CUGAUGAG X CGAA ACGCAUGU		ACATGCGT C GCAAACTC	
2977	ACCCAAA CUGAUGAG X CGAA AGUUUGCG		CGCAAACT C TTTGGGGT	
2979	AGACCCCA CUGAUGAG X CGAA AGAGUUUG		CAAACTCT T TGGGGTCT	
2980	AAGACCCC CUGAUGAG X CGAA AAGAGUUU		AAACTCTT T GGGGTCTT	
2986	AGCCGCAA CUGAUGAG X CGAA ACCCCAAA		TTTGGGGT C TTGCGGCT	
2988	UCAGCCGC CUGAUGAG X CGAA AGACCCCA		TGGGGTCT T GCGGCTGA	
3002	CAGGCUGU CUGAUGAG X CGAA ACACUUCA		TGAAGTGT C ACAGCCTG	
3012	AAUCCAGA CUGAUGAG X CGAA ACAGGCUG		CAGCCTGT T TCTGGATT	
3013	AAAUCCAG CUGAUGAG X CGAA AACAGGCU		AGCCTGTT T CTGGATTT	
3014	CAAAUCCA CUGAUGAG X CGAA AAACAGGC		GCCTGTTT C TGGATTTG	
3020	CACCUGCA CUGAUGAG X CGAA AUCCAGAA		TTCTGGAT T TGCAGGTG	
3021	UCACCUGC CUGAUGAG X CGAA AAUCCAGA		TCTGGATT T GCAGGTGA	
3037	ACCGUCUG CUGAUGAG X CGAA AGGCUGUU		AACAGCCT C AGACGGT	
3058	AUCUUGUA CUGAUGAG X CGAA AUGUUGGU		ACCAACAT C TACAAGAT	

3060	GGAUCUUG CUGAUGAG X CGAA AGAUGUUG		CAACATCT A CAAGATCC	
3067	AGCAGGAG CUGAUGAG X CGAA AUCUUGUA		TACAAGAT C CTCCTGCT	
3070	UGCAGCAG CUGAUGAG X CGAA AGGAUCUU		AAGATCCT C CTGCTGCA	
3084	GAAACCUG CUGAUGAG X CGAA ACGCCUGC		GCAGGCGT A CAGGTTTC	
3090	AUGCGUGA CUGAUGAG X CGAA ACCUGUAC		GTACAGGT T TCACGCAT	
3091	CAUGCGUG CUGAUGAG X CGAA AACCUGUA		TACAGGTT T CACGCATG	
3092	ACAUGCGU CUGAUGAG X CGAA AAACCUGU		ACAGGTTT C ACGCATGT	
3112	UGAAAUGG CUGAUGAG X CGAA AGCUGCAG		CTGCAGCT C CCATTTCA	
3117	GCUGAUGA CUGAUGAG X CGAA AUGGGAGC		GCTCCCAT T TCATCAGC	
3118	UGCUGAUG CUGAUGAG X CGAA AAUGGGAG		CTCCCATT T CATCAGCA	
3119	UUGCUGAU CUGAUGAG X CGAA AAAUGGGA		TCCCATTT C ATCAGCAA	
3122	AACUUGCU CUGAUGAG X CGAA AUGAAAUG		CATTTCAT C AGCAAGTT	
3130	UUCUUCCA CUGAUGAG X CGAA ACUUGCUG		CAGCAAGT T GGAAGAA	
3133	GGUUUUCC CUGAUGAG X CGAA AACUUGCU		AGCAAGTT T GGAAGAAC	
3147	GCAGGAAA CUGAUGAG X CGAA AUGUGGGG		CCCCACAT T TTTCCTGC	
3148	CGCAGGAA CUGAUGAG X CGAA AAUGUGGG		CCCCACATT T TTCCTGCG	
3149	GCGCAGGA CUGAUGAG X CGAA AAAUGUGG		CCCACATTT T TCCTGCGC	
3150	CGCGCAGG CUGAUGAG X CGAA AAAAUGUG		CACATTTT T CCTGCGCG	
3151	ACGCGCAG CUGAUGAG X CGAA AAAAAUGU		ACATTTTT C CTGCGCGT	
3160	UCAGAGAU CUGAUGAG X CGAA ACGCGCAG		CTGCGCGT C ATCTCTGA	
3163	GUGUCAGA CUGAUGAG X CGAA AUGACGCG		CGCGTCAT C TCTGACAC	
3165	CCGUGUCA CUGAUGAG X CGAA AGAUGACG		CGTCATCT C TGACACGG	
3177	AGCAGAGG CUGAUGAG X CGAA AGGCCGUG		CACGGCCT C CCTCTGCT	
3181	GAGUAGCA CUGAUGAG X CGAA AGGGAGGC		GCCTCCCT C TGCTACTC	
3186	GGAUGGAG CUGAUGAG X CGAA AGCAGAGG		CCTCTGCT A CTCCATCC	
3189	UCAGGAUG CUGAUGAG X CGAA AGUAGCAG		CTGCTACT C CATCCTGA	
3193	GCUUUCAG CUGAUGAG X CGAA AUGGAGUA		TACTCCAT C CTGAAAGC	
3219	CCCCCAGC CUGAUGAG X CGAA ACAUCCCU		AGGGATGT C GCTGGGGG	
3248	GGAGGGCA CUGAUGAG X CGAA AGGGCCGG		CCGGCCCT C TGCCCTCC	
3255	CGGGCUCC CUGAUGAG X CGAA AGGGCAGA		TCTGCCCT C CGAGGCCG	
3288	UGAGCAGG CUGAUGAG X CGAA AUGCUUGG		CCAAGCAT T CCTGCTCA	
3289	UUGAGCAG CUGAUGAG X CGAA AAUGCUUG		CAAGCATT C CTGCTCAA	
3295	GUCAGCUU CUGAUGAG X CGAA AGCAGGAA		TTCCTGCT C AAGCTGAC	
3305	ACGGUGUC CUGAUGAG X CGAA AGUCAGCU		AGCTGACT C GACACCGT	
3316	ACGUAGGU CUGAUGAG X CGAA ACACGGUG		CACCGTGT C ACCTACGT	
3321	GUGGCACG CUGAUGAG X CGAA AGGUGACA		TGTCACCT A CGTGCCAC	
3330	GACCCCAG CUGAUGAG X CGAA AGUGGCAC		GTGCCACT C CTGGGGTC	
3339	UCCUGAGU CUGAUGAG X CGAA ACCCCAGG		CCTGGGGT C ACTCAGGA	
3343	GCUGUCCU CUGAUGAG X CGAA AGGACCCC		GGGTCCT C AGGACAGC	
3368	GAGCUUCC CUGAUGAG X CGAA ACUCAGCU		AGCTGAGT C GGAAGCTC	
3376	GUCCCCGG CUGAUGAG X CGAA AGCUUCCG		CGGAAGCT C CCGGGGAC	
3429	UGAAGUCU CUGAUGAG X CGAA AGGGCAGU		ACTGCCCT C AGACTTCA	
3435	UGGUCUUG CUGAUGAG X CGAA AGUCUGAG		CTCAGACT T CAAGACCA	
3456	AUGGUCUU CUGAUGAG X CGAA AAGUCUGA		TCAGACTT C AAGACCAT	
3445	CAGUCCAG CUGAUGAG X CGAA AUGGUCUU		AAGACCAT C CTGGACTG	
3503	CCCGGCGU CUGAUGAG X CGAA ACAGGGCU		AGCCCTGT C ACGCCGGG	
3514	GGGACGUA CUGAUGAG X CGAA AGCCCGGC		GCCCGGCT C TACGTCCC	

3516	CUGGGACG CUGAUGAG X CGAA AGAGCCCG		CGGGCTCT A CGTCCCAG	
3520	CUCCUGG CUGAUGAG X CGAA ACGUAGAG		CTCTACGT C CCAGGGAG	
3568	AGGCCUCA CUGAUGAG X CGAA ACUCCCAG		CTGGGAGT C TGAGGCCT	
3587	CUCGGCCA CUGAUGAG X CGAA ACACUCAC		GTGAGTGT T TGGCCGAG	
3588	CCUCGGCC CUGAUGAG X CGAA AACACUCA		TGAGTGTT T GGCCGAGG	
3606	UUCAGCCG CUGAUGAG X CGAA ACAUGCAG		CTGCATGT C CGGCTGAA	
3625	CUCAGCCG CUGAUGAG X CGAA ACACUCAG		CTGAGTGT C CGGCTGAG	
3648	CUUGGCUG CUGAUGAG X CGAA ACACUCGC		GCGAGTGT C CAGCCAAG	
3667	GUGUGCUG CUGAUGAG X CGAA ACACUCAG		CTGAGTGT C CAGCACAC	
3683	GAAGUGAA CUGAUGAG X CGAA ACGGCAGG		CCTGCCGT C TTCACTTC	
3685	GGGAAGUG CUGAUGAG X CGAA AGACGGCA		TGCCGTCT T CACTTCCC	
3686	GGGGAAGU CUGAUGAG X CGAA AAGACGGC		GCCGTCTT C ACTTCCCC	
3690	CUGUGGGG CUGAUGAG X CGAA AGUGAAGA		TCTTCACT T CCCCACAG	
3691	CCUGUGGG CUGAUGAG X CGAA AAGUGAAG		CTTCACTT C CCCACAGG	
3708	GUGGAGCC CUGAUGAG X CGAA AGCGCCAG		CTGGCGGT C GGCTCCAC	
3713	CUGGGGUG CUGAUGAG X CGAA AGCCGAGC		GCTCGGCT C CACCCCAG	
3730	GUGAGGAA CUGAUGAG X CGAA AGCUGGCC		GGCCAGCT T TTCCTCAC	
3731	GGUGAGGA CUGAUGAG X CGAA AAGCUGGC		GCCAGCTT T TCCTCACC	
3732	UGGUGAGG CUGAUGAG X CGAA AAAGCUGG		CCAGCTTT T CCTCACCA	
3735	CUGGUGAG CUGAUGAG X CGAA AAAAGCUG		CAGCTTTT C CTCACCAG	
3736	CUCCUGGU CUGAUGAG X CGAA AGGAAAAG		CTTTTCCT C ACCAGGAG	
3752	GGGAGUGG CUGAUGAG X CGAA AGCCGGGC		GCCCGGCT T CCACTCCC	
3753	GGGGAGUG CUGAUGAG X CGAA AAGCCGGG		CCCGGCTT C CACTCCCC	
3758	UAUGUGGG CUGAUGAG X CGAA AGUGGAAG		CTTCCACT C CCCACATA	
3766	ACUAUUCC CUGAUGAG X CGAA AUGUGGGG		CCCCACAT A GGAATAGT	
3772	GGAUGGAC CUGAUGAG X CGAA AUUCCUAU		ATAGGAAT A GTCCATCC	
3775	UGGGGAUG CUGAUGAG X CGAA ACUAUUCC		GGAATAGT C CATCCCCA	
3779	AAUCUGGG CUGAUGAG X CGAA AUGGACUA		TAGTCCAT C CCCAGATT	
3787	CAAUGGCG CUGAUGAG X CGAA AUCUGGGG		CCCCAGAT T CGCCATTG	
3788	ACAAUGGC CUGAUGAG X CGAA AAUCUGGG		CCCAGATT C GCCATTGT	
3794	GGGUGAAC CUGAUGAG X CGAA AUGGCGAA		TTCGCCAT T GTTCACCC	
3797	GAGGGGUG CUGAUGAG X CGAA ACAAUGGC		GCCATTGT T CACCCCTC	
3748	CGAGGGGU CUGAUGAG X CGAA AACAAUGG		CCATTGTT C ACCCCTCG	
3805	GGCAGGGC CUGAUGAG X CGAA AGGGGUGA		TCACCCCT C GCCCTGCC	
3816	AGGCAAAG CUGAUGAG X CGAA AGGGCAGG		CCTGCCCT C CTTTGCCT	
3819	GGAAGGCA CUGAUGAG X CGAA AGGAGGGC		GCCCTCCT T TGCCTTCC	
3820	UGGAAGGC CUGAUGAG X CGAA AAGGAGGG		CCCTCCTT T GCCTTCCA	
3825	GGGGGUGG CUGAUGAG X CGAA AGGCAAAG		CTTTGCCT T CCACCCCC	
3926	UGGGGGUG CUGAUGAG X CGAA AAGGCAAA		TTTGCCTT C CACCCCCA	
3839	UCCACCUG CUGAUGAG X CGAA AUGGUGGG		CCCACCAT C CAGGTGGA	
3873	AAUUCCCA CUGAUGAG X CGAA AGCUCCCA		TGGGAGCT C TGGGAATT	
3881	UCACUCCA CUGAUGAG X CGAA AUUCCCAG		CTGGGAAT T TGGAGTGA	
3882	GUCACUCC CUGAUGAG X CGAA AAUUCCCA		TGGGAATT T GGAGTGAC	
3907	CGCCUGUG CUGAUGAG X CGAA ACAGGGCA		TGCCCTGT A CACAGGCG	
3940	CCCACAGG CUGAUGAG X CGAA ACCCCAU		ATGGGGGT C CCTGTGGG	
3950	CCCAAUUU CUGAUGAG X CGAA ACCCACAG		CTGTGGGT C AAATTGGG	
3955	CUCCCCCC CUGAUGAG X CGAA AUUUGACC		GGTCAAAT T GGGGGAG	

Table III

3977	CAGUAUUU CUGAUGAG X CGAA ACUCCCAC		GTGGGAGT A AAATACTG	
3982	AUAUUCAG CUGAUGAG X CGAA AUUUUACU		AGTAAAAT A CTGAATAT	
3989	AACUCAUA CUGAUGAG X CGAA AUUCAGUA		TACTGAAT A TATGAGTT	
3991	AAAACUCA CUGAUGAG X CGAA AUAUUCAG		CTGAATAT A TGAGTTTT	
3997	AACUGAAA CUGAUGAG X CGAA ACUCAUAU		ATATGAGT T TTTCAGTT	
3998	AAACUGAA CUGAUGAG X CGAA AACUCAUA		TATGAGTT T TTCAGTTT	
3999	AAAACUGA CUGAUGAG X CGAA AAACUCAU		ATGAGTTT T TCAGTTTT	
4000	CAAAACUG CUGAUGAG X CGAA AAAACUCA		TGAGTTTT T CAGTTTTG	
4001	UCAAAACU CUGAUGAG X CGAA AAAAACUC		GAGTTTTT C AGTTTTGA	
4005	UUUUUCAA CUGAUGAG X CGAA ACUGAAAA		TTTTCAGT T TTGAAAAA	
4006	UUUUUUCA CUGAUGAG X CGAA AACUGAAA		TTTCAGTT T TGAAAAAA	
4007	UUUUUUUC CUGAUGAG X CGAA AAACUGAA		TTCAGTTT T GAAAAAAA	

Stem Length = 8 . Core Sequence = CUGAUGAG X CGAA (X = GCCGUUAGGC or other stem II
sequence and length (greater than or equal to 2 base-pairs))
Seq1 = TERT (Homo sapiens telomerase reverse transcriptase (TERT) mRNA, 4015 bp); Nakamura *et
al.,* Science 277 (5328), 955-959 (1997)

Table IV: Human telomerase reverse transcriptase (TERT) NCH Ribozyme and Target Sequence

nt. Position	Ribozyme Sequence	Seq ID Nos	Substrate Sequence	Seq ID Nos
14	GCGCAGCA CUGAUGAG X CGAA IACGCAGC		GCTGCGTC C TGCTGCGC	
15	UGCGCAGC CUGAUGAG X CGAA IGACGCAG		CTGCGTCC T GCTGCGCA	
18	ACGUGCGC CUGAUGAG X CGAA ICAGGACG		CGTGCTGC T GCGCACGT	
23	UUCCCACG CUGAUGAG X CGAA ICGCAGCA		TGCTGCGC A CGTGGGAA	
34	GGGCCCAG CUGAUGAG X CGAA ICUUCCCA		TGGGAAGC C CTGGCCC	
35	CGGGCCCA CUGAUGAG X CGAA IGCUUCCC		GGGAAGCC C TGGCCCG	
36	CCGGGCCC CUGAUGAG X CGAA IGGCUUCC		GGAAGCCC T GGCCCGG	
40	GUGGCCCG CUGAUGAG X CGAA ICCAGGGC		GCCCTGGC C CGGGCCAC	
41	GGUGGCCC CUGAUGAG X CGAA IGCCAGGG		CCCTGGCC C GGGCCACC	
42	GGGUGGCC CUGAUGAG X CGAA IGGCCAGG		CCTGGCCC G GGCCACCC	
46	GCGGGGGU CUGAUGAG X CGAA ICCGGGGC		GCCCCGGC C ACCCCGC	
47	CGCGGGGG CUGAUGAG X CGAA IGCCGGGG		CCCCGGCC A CCCCCGCG	
49	AUCGCGGG CUGAUGAG X CGAA IUGGCCGG		CCGGCCAC C CCCGCGAT	
50	CAUCGCGG CUGAUGAG X CGAA ICGGGCCG		CGGCCACC C CCGCGATG	
53	GCAUCGCG CUGAUGAG X CGAA IGGUGGCC		GGCCACCC C CGCGATGC	
52	GGCAUCGC CUGAUGAG X CGAA IGGGUGGC		GCCACCCC C GCGATGCC	
60	GAGCGCGC CUGAUGAG X CGAA ICAUCGCG		CGCGATGC C GCGCGCTC	
67	CAGCGGGG CUGAUGAG X CGAA ICGCGCGG		CCGCGCGC T CCCCGCTG	
69	GGCAGCGG CUGAUGAG X CGAA IAGCGCGC		GCGCGCTC C CCGCTGCC	
70	CGGCAGCG CUGAUGAG X CGAA IGAGCGCG		CGCGCTCC C CGCTGCCG	
71	UCGGCAGC CUGAUGAG X CGAA IGGAGCGC		GCGCTCCC C GCTGCCGA	
74	GGCUCGGC CUGAUGAG X CGAA ICGGGGAG		CTCCCCGC T GCCGAGCC	
77	CACGGCUC CUGAUGAG X CGAA ICAGCGGG		CCCGGCTGC C GAGCCGTG	
87	GAGCGCAC CUGAUGAG X CGAA ICUCGGCA		TGCCGAGC C GTGCGCTC	
89	CAGCAGGG CUGAUGAG X CGAA ICGCACGG		CCGTGCGC T CCCTGCTG	
91	CGCAGCAG CUGAUGAG X CGAA IAGCGCAC		GTGCGCTC C CTGCTGCG	
92	GCGCAGCA CUGAUGAG X CGAA IGAGCGCA		TGCGCTCC C TGCTGCGC	
95	UGCGCAGC CUGAUGAG X CGAA IGGAGCGC		GCGCTCCC T GCTGCGCA	
96	GGCUGCGC CUGAUGAG X CGAA ICAGGGAG		CTCCCTGC T GCGCAGCC	
101	GUAGUGGC CUGAUGAG X CGAA ICGCAGCA		TGCTGCGC A GCCACTAC	
104	GCGGUAGU CUGAUGAG X CGAA ICUGCGCA		TGCGCAGC C ACTACCGC	
105	CGCGGUAG CUGAUGAG X CGAA IGCUGCGC		GCGCAGCC A CTACCGCG	
107	CUCGCGGU CUGAUGAG X CGAA IUGGCUGC		GCAGCCAC T ACCGCGAG	
110	CACCUCGC CUGAUGAG X CGAA IUAGUGGC		GCCACTAC C GCGAGGTG	
120	CCAGCGGC CUGAUGAG X CGAA ICACCUCG		CGAGGTGC T GCCGCTGG	
123	UGGCCAGC CUGAUGAG X CGAA ICAGCACC		GGTGCTGC C GCTGGCCA	
126	ACGUGGCC CUGAUGAG X CGAA ICGGCAGC		GCTGCCGC T GGCCACGT	
130	ACGAACGU CUGAUGAG X CGAA ICCAGCGG		CCGCTGGC C ACGTTCGT	
131	CACGAACG CUGAUGAG X CGAA IGCCAGCG		CGCTGGCC A CGTTCGTG	
146	GGGCCCCA CUGAUGAG X CGAA ICGGCGCA		TGCGGCGC C TGGGGCCC	
147	GGGGCCCC CUGAUGAG X CGAA IGCGGCGC		GCGGCGCC T GGGGCCCC	
153	AGCCCUGG CUGAUGAG X CGAA ICCCCAGG		CCTGGGGC C CCAGGGCT	
154	CAGCCCUG CUGAUGAG X CGAA IGCCCCAG		CTGGGGCC C CAGGGCTG	

155	CCAGCCCU CUGAUGAG X CGAA IGGCCCA		TGGGGCCC C AGGGCTGG	
156	GCCAGCCC CUGAUGAG X CGAA IGGGCCCC		GGGGCCCC A GGGCTGGC	
161	CAGCCGCC CUGAUGAG X CGAA ICCCUGGG		CCCAGGGC T GGCGGCTG	
163	GCUGCACC CUGAUGAG X CGAA ICCGCCAG		CTGGCGGC T GGTGCAGC	
174	CCCCGCGC CUGAUGAG X CGAA ICACCAGC		GCTGGTGC A GCGCGGG	
186	AGCCGCCG CUGAUGAG X CGAA IUCCCGGC		GCGGGGAC C CGGCGGCT	
188	AAGCCGCC CUGAUGAG X CGAA IGUCCCCG		CGGGGACC C GGCGGCTT	
195	GCGCGGAA CUGAUGAG X CGAA ICCGCGGG		CCGCCGGC T TTCCGCGC	
197	CAGCGCGC CUGAUGAG X CGAA IAAAGCCG		CGGCTTTC C GCGCGCTG	
204	GGGCCACC CUGAUGAG X CGAA IGGCGCGG		CCGCGGCG T GGTGGCCC	
211	AGGCACUG CUGAUGAG X CGAA ICCACCAG		CTGGTGGC C CAGTGCCT	
212	CAGGCACU CUGAUGAG X CGAA IGCCACCA		TGGTGGCC C AGTGCCTG	
215	CCAGGCAC CUGAUGAG X CGAA IGGCCACC		GGTGGCCC A GTGCCTGG	
218	GCCACCCA CUGAUGAG X CGAA ICACUGGG		CCCAGTGC C TGGTGTGC	
219	CGCACACC CUGAUGAG X CGAA IGCACUGG		CCAGTGCC T GGTGTGCG	
231	CGUCCCAG CUGAUGAG X CGAA ICACGCAC		GTGCGTGC C CTGGGACG	
230	GCGUCCCA CUGAUGAG X CGAA IGCACGCA		TGCGTGCC C TGGGACGC	
233	UGCGUCCC CUGAUGAG X CGAA IGGCACGC		GCGTGCCC T GGGACGCA	
241	GGCGGCCG CUGAUGAG X CGAA ICGUCCCA		TGGGACGC A CGGCCGCC	
247	CGGGGGGC CUGAUGAG X CGAA ICCCUGCG		CGCACGGC C GCCCCCCC	
249	CGGCGGGG CUGAUGAG X CGAA ICGGCCGU		ACGGCCGC C CCCCGCCG	
250	GCGGCGGG CUGAUGAG X CGAA IGCGGCCG		CGGCCGCC C CCCGCCGC	
251	GGCGGCGG CUGAUGAG X CGAA IGGCGGCCG		GGCCGCCC C CCGCCGCC	
252	GGGCGGCG CUGAUGAG X CGAA IGGGCGGCC		GCCCGCCC C CGCCGCCG	
253	GGGGCGGC CUGAUGAG X CGAA IGGGGCGG		CGGCCCCC C GCCGCCGC	
254	GAGGGGGC CUGAUGAG X CGAA ICGGGGGG		CCCCCCGC C GCCCCCTC	
259	AAGGAGGG CUGAUGAG X CGAA ICGGCGGG		CCGGCCGC C CCCTCCTT	
260	GAAGGAGG CUGAUGAG X CGAA IGCGGCGG		CCGCCGCC C CCTCCTTC	
261	GGAAGGAG CUGAUGAG X CGAA IGGCGGCG		CGCCGCCC C CTCCTTCC	
262	CGGAAGGA CUGAUGAG X CGAA IGGGCGGC		GCCGCCCC C TCCTTCCG	
263	GCGGAAGG CUGAUGAG X CGAA IGGGGCGG		CCGCCCCC T CCTTCCGC	
265	UGGCGGAA CUGAUGAG X CGAA IAGGGGGC		GCCCCCTC C TTCCGCCA	
266	CUGGCGGA CUGAUGAG X CGAA IGAGGGGG		CCCCCTCC T TCCGCCAG	
269	CACCUGGC CUGAUGAG X CGAA IAAGGAGG		CCTCCTTC C GCCAGGTG	
271	GGACACCU CUGAUGAG X CGAA IGGGAAGG		CCTTCCGC C AGGTGTCC	
273	AGGACACC CUGAUGAG X CGAA IGCGGAAG		CTTCCGCC A GGTGTCCT	
280	UUCAGGCA CUGAUGAG X CGAA IACACCUG		CAGGTGTC C TGCCTGAA	
283	CUUCAGGC CUGAUGAG X CGAA IGACACCU		AGGTGTCC T GCCTGAAG	
284	CUCCUUCA CUGAUGAG X CGAA ICAGGACA		TGCCTGCC C TGAAGGAG	
285	GCUCCUUC CUGAUGAG X CGAA IGCAGGAC		GTCCTGCC T GAAGGAGC	
294	GGGCCACC CUGAUGAG X CGAA ICUCCUUC		GAAGGAGC T GGTGGCCC	
301	AGCACUGG CUGAUGAG X CGAA ICCACCAG		CTGGTGGC C CGAGTGCT	
302	CAGCACUG CUGAUGAG X CGAA IGCCACCA		TGGTGGCC C GAGTGCTG	
305	GCCUCUGG CUGAUGAG X CGAA ICACUCGG		CCGAGTGC T GCAGAGGC	
317	ACAGCCUC CUGAUGAG X CGAA ICAGCACU		AGTGCTGC A GAGGCTGT	
318	GCUCGCAC CUGAUGAG X CGAA ICCUCUGC		GCAGAGGC T GTGCGAGC	
345	CGAAGGCC CUGAUGAG X CGAA ICACGUUC		GAACGTGC T GGCCTTCG	

349	AAGCCGAA CUGAUGAG X CGAA ICCAGCAC		GTGCTGGC C TTCGGCTT	
350	GAAGCCGA CUGAUGAG X CGAA IGCCAGCA		TGCTGGCC T TCGGCTTC	
356	CAGCGCGA CUGAUGAG X CGAA ICGGAAGG		CCTTCGGC T TCGGCCTG	
362	CGUCCAGC CUGAUGAG X CGAA ICGGGAAG		CTTCGGC T GCTGGACG	
366	CCCGGUCC CUGAUGAG X CGAA ICAGCGCG		CGCGCTGC T GGACGGGG	
376	CCCCGGCG CUGAUGAG X CGAA ICCCCGUC		GACGGGGC C CGCGGGGG	
377	GCCCCGGC CUGAUGAG X CGAA IGCCCCGU		ACGGGGCC C GCGGGGC	
386	CUCGGGGG CUGAUGAG X CGAA ICCCCCGC		GCGGGGGC C CCCCGAG	
387	CCUCGGGG CUGAUGAG X CGAA IGCCCCCG		CGGGGGCC C CCCCGAGG	
388	GCCUCGGG CUGAUGAG X CGAA IGGCCCCC		GGGGGCCC C CCGAGGC	
389	GGCCUCGG CUGAUGAG X CGAA IGGGCCCC		GGGGCCC C CCGAGGCC	
390	AGGCCUCG CUGAUGAG X CGAA IGGGGCCC		GGGCCCCC C CGAGGCCT	
391	AAGGCCUC CUGAUGAG X CGAA IGGGGGCC		GGCCCCCC C GAGGCCTT	
392	GUGGUGAA CUGAUGAG X CGAA ICCUCGGG		CCCGAGGC C TTCACCAC	
398	GGUGGUGA CUGAUGAG X CGAA IGCCUCGG		CCGAGGCC T TCACCAC	
401	GCUGGUGG CUGAUGAG X CGAA IAAGGCCU		AGGCCTTC A CCACCAGC	
403	ACGCUGGU CUGAUGAG X CGAA IUGAAGGC		GCCTTCAC C ACCAGCGT	
404	CACGCUGG CUGAUGAG X CGAA IGUGAAGG		CCTTCACC A CCAGCGTG	
406	CGCAGCCU CUGAUGAG X CGAA IUGGUGAA		TTCACCAC C AGCGTGCG	
407	GCGCAGCC CUGAUGAG X CGAA IGUGGUGA		TCACCACC A GCGTGCGC	
416	CAGGUAGC CUGAUGAG X CGAA ICCGCACGC		GCGTGCGC A GCTACCTG	
419	GGGCAGGU CUGAUGAG X CGAA ICUGCCCA		TGCCCAGC T ACCTGCCC	
422	GUUGGGCA CUGAUGAG X CGAA IUAGCUGC		GCAGCTAC C TGCCCAAC	
423	UGUUGGGC CUGAUGAG X CGAA IGUAGCUG		CAGCTACC T GCCCAACA	
426	CCGUGUUG CUGAUGAG X CGAA ICAGGUAG		CTACCTGC C CAACACGG	
427	ACCGUGUU CUGAUGAG X CGAA IGCAGGUA		TACCTGCC C AACACGGT	
428	CACCGUGU CUGAUGAG X CGAA IGGCAGGU		ACCTGCCC A ACACGGTG	
433	GGUCACCG CUGAUGAG X CGAA IUUGGGCA		TGCCCAAC A CGGTGACC	
439	AGUGCGUC CUGAUGAG X CGAA IUCACCGU		ACGGTGAC C GACGCACT	
445	CCCCGCAG CUGAUGAG X CGAA ICGUCGGU		ACCGACGC A CTGCGGGG	
447	UCCCCGGC CUGAUGAG X CGAA IUGGCGUCG		CGACGCAC T GCGGGGGA	
471	GCAGCAGC CUGAUGAG X CGAA ICCCCCAC		GTGGGGGC T GCTGCTGC	
474	GGCGCAGC CUGAUGAG X CGAA ICAGCCCC		GGGGCTGC T GCTGCGCC	
477	CGCGGCGC CUGAUGAG X CGAA ICAGCAGC		GGCTGCTGC T GCGCCGCG	
482	GCCCACGC CUGAUGAG X CGAA ICGGCAGCA		TGCTGCGC C GCGTGGGC	
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507	CCAGCAGG CUGAUGAG X CGAA IAACCAGC		GCTGGTTC A CCTGCTGG	
509	UGCCAGCA CUGAUGAG X CGAA IUGAACCA		TGGTTCAC C TGCTGGCA	
510	GUGCCAGC CUGAUGAG X CGAA IGUGAACC		GGTTCACC T GCTGGCAC	
513	AGCGUGCC CUGAUGAG X CGAA ICAGGUGA		TCACCTGC T GGCACGCT	
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521	GAGCGCGC CUGAUGAG X CGAA ICGUGCCA		TGGCACGC T GCGCGCTC	
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537	GAGCCACC CUGAUGAG X CGAA ICACAAAG		CTTTGTGC T GGTGGCTC	
544	CAGCUGGG CUGAUGAG X CGAA ICCACCAG		CTGGTGGC T CCCAGCTG	
546	CGCAGCUG CUGAUGAG X CGAA IAGCCACC		GGTGGCTC C CAGCTGCG	

547	GCGCAGCU CUGAUGAG X CGAA ISAGCCAS		GTGSCTCC C AGCTGCGC	
548	GSCGCASC CUGAUGAG X CGAA ISSAGCCA		TGGCTCCS A SCTSCSCC	
551	SUASSCSC CUGAUGAG X CGAA ICUGSSAS		CTCCCAGC T SCGCCTAC	
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557	CACCUGGU CUGAUGAG X CGAA ISCGCAGC		SCTSCSCC T ACCAGGTS	
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579	SCUGSUAC CUGAUGAG X CGAA ICSSCSSC		SCSSCCSC T GTACCAGC	
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621	CACUASCS CUGAUGAG X CGAA IUSSCSSS		CCSSCCAC A CSSCTASTS	
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739	CUUCGGCU CUGAUGAG X CGAA ICACUGCC		GGCAGTGC C AGCCGAAG	
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743	CAGACUUC CUGAUGAG X CGAA ICUGGCAC		GTGCCAGC C GAAGTCTG	
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1296	CUCGCAGC CUGAUGAG X CGAA IGCAGUGC		GCACTGCC C GCTGCGAG	
1299	CAGCUCGC CUGAUGAG X CGAA ICGGGCAG		CTGCCCGC T GCGAGCTG	
1306	GUGACCGC CUGAUGAG X CGAA ICUCGCAG		CTGCGAGC T GGGGTCAC	
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1315	GCUGCUGG CUGAUGAG X CGAA IUUGACCGC		GCGGTCAC C CCAGCAGC	
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1324	CAGACACC CUGAUGAG X CGAA ICUGCUGG		CCAGCAGC C GGTGTCTG	
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1336	UUCUCCCG CUGAUGAG X CGAA ICACAGAC		GTCTGTGC C CGGGAGAA	
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1349	AGAGCCCU CUGAUGAG X CGAA IGGCUUCU		AGAAGCCC C AGGGCPCT	
1350	CAGAGCCC CUGAUGAG X CGAA IGGGCUUC		GAAGCCCC A GGGCPCTG	
1356	CGGCACAG CUGAUGAG X CGAA ICCCUGGG		CCCAGGGC T CTGTGGCG	
1357	GCCGCCAC CUGAUGAG X CGAA IAGCCCUG		CAGGGCTC T GTGGCGGC	
1366	UCCUGGGG CUGAUGAG X CGAA ICCGCCAC		GTGGCGGC C CCCGAGGA	
1367	CUCCUGGG CUGAUGAG X CGAA IGCCGCCA		TGGCGGCC C CCGAGGAG	
1368	CCUCCUGG CUGAUGAG X CGAA IGGCCGCC		GGCGGCCC C CGAGGAGG	
1369	UCCUCCUG CUGAUGAG X CGAA IGGGCCGC		GCGGCCCC C GAGGAGGA	
1382	GGGGUCUG CUGAUGAG X CGAA IUCCUCCU		AGGAGGAC A CAGACCCC	
1384	CGGGGGUC CUGAUGAG X CGAA IUGUCCUC		GAGGACAC A GACCCCCG	
1388	GCGAGGGG CUGAUGAG X CGAA IGCUGUGU		ACACAGAC C CCGGPCGC	
1389	GGCGAGGG CUGAUGAG X CGAA IGUCUGUG		CACAGACC C CGGPCGCC	
1390	AGGCGACG CUGAUGAG X CGAA IGGUCUGU		ACAGACCC C GGPCGCCT	
1391	CAGGGAC CUGAUGAG X CGAA IGGGUCUG		CAGACCCC C GPCGCCPG	
1397	CUGCACCA CUGAUGAG X CGAA ICGACGGG		CCCGTCGC C TGGTGCAG	
1398	GCUGCACC CUGAUGAG X CGAA IGCGACGG		CCGTCGCC T GGTGCAGC	
1404	GGAGCAGC CUGAUGAG X CGAA ICACCAGG		CCTGGTGC A GCTGCTCC	
1407	GGCGGAGC CUGAUGAG X CGAA ICUGCACC		GGTGCAGC T GCTCCGCC	
1410	GCUGGCGG CUGAUGAG X CGAA ICAGCUGC		GCAGCTGC T CCGCCAGC	
1412	GUGCUGGC CUGAUGAG X CGAA IAGCAGCU		AGCTGCTC C GCCAGCAC	
1415	GCUGUGCU CUGAUGAG X CGAA ICGGAGCA		TGCTCCGC C AGCACAGC	
1416	UGCUGUGC CUGAUGAG X CGAA IGCGGAGC		GCTCCGCC A GCACAGCA	
1419	GGCUGCUG CUGAUGAG X CGAA ICUGGCGG		CCGCCAGC A CAGCAGCC	
1421	GGGCUGGC CUGAUGAG X CGAA IUGCUGGC		GCCAGCAC A GCAGCCCC	
1424	CCAGGGGC CUGAUGAG X CGAA ICUGUGCU		AGCACAGC A GCCCCTGG	
1427	CUGCCAGG CUGAUGAG X CGAA ICUGCUGU		ACAGCAGC C CCTGGCAG	
1428	CCUGCCAG CUGAUGAG X CGAA IGCUGCUG		CAGCAGCC C CTGGCAGG	
1429	ACCUGCCA CUGAUGAG X CGAA IGGCUGCU		AGCAGCCC C TGGCAGGT	
1430	CACCUGCC CUGAUGAG X CGAA IGGGCUGC		GCAGCCCC T GGCAGGTG	
1434	CGUACACC CUGAUGAG X CGAA ICCAGGGG		CCCCTGGC A GGTGTACG	
1445	CCGCACGA CUGAUGAG X CGAA ICCGUACA		TGTACGGC T TCGTGCGG	
1456	CGCAGGCA CUGAUGAG X CGAA ICCCGCAC		GTGCGGGC C TGCCTGCG	
1457	GCGCAGGC CUGAUGAG X CGAA IGCCCGCA		TGCGGGCC T GCCTGCGC	
1460	CCGGCGCA CUGAUGAG X CGAA ICAGGCCC		GGGCCTGC C TGCGCCGG	
1463	GCCGGCGC CUGAUGAG X CGAA IGCAGGCC		GGCCTGCC T GCGCCGGC	
1466	CACCGGCC CUGAUGAG X CGAA IGGCAGGC		GCCTGCGC C GGCTGGTG	
1470	GGGGCACC CUGAUGAG X CGAA ICCGGCGC		GCGCCGGC T GGTGCCCC	
1476	GGCCUGGG CUGAUGAG X CGAA ICACCAGC		GCTGGTGC C CCCAGGCC	
1477	AGGCCUGG CUGAUGAG X CGAA IGCACCAG		CTGGTGCC C CCAGGCCT	
1478	GAGGCCUG CUGAUGAG X CGAA IGGCACCA		TGGTGCCC C CAGGCCTC	
1479	AGAGGCCU CUGAUGAG X CGAA IGGGCACC		GGTGCCCC C AGGCCPCT	
1480	CAGAGGCC CUGAUGAG X CGAA IGGGGCAC		GTGCCCCC A GGCCPCTG	
1484	GCCCCAGA CUGAUGAG X CGAA ICCUGGGG		CCCCAGGC C TCTGGGGC	
1485	AGCCCCAG CUGAUGAG X CGAA IGCCUGGG		CCCAGGCC T CTGGGGCT	
1487	GGAGCCCC CUGAUGAG X CGAA IAGGCCUG		CAGGCCTC T GGGGCTCC	

1493	GUGCCUGG CUGAUGAG X CGAA ICCCAGA	TCTGGGGC T CCAGGCAC	
1495	UUGUGCCU CUGAUGAG X CGAA IAGCCCA	TGGGCTC C AGGCACAA	
1496	GUUGUGCC CUGAUGAG X CGAA IGAGCCC	GGGGCTCC A GGCACAAC	
1500	GUUCGUUG CUGAUGAG X CGAA ICCUGGAG	CTCCAGGC A CAACGAAC	
1502	GCGUUCGU CUGAUGAG X CGAA IUGCCUGG	CCAGGCAC A ACGAACGC	
1511	GAGGAAGC CUGAUGAG X CGAA ICGUUCGU	AGGAACGC C GTTCGTC	
1514	CCUGAGGA CUGAUGAG X CGAA ICGGCGUU	AACGCCGC T TCCTCAGG	
1517	GUUCCUGA CUGAUGAG X CGAA IAAGCGGC	GCGGCTTC C TCAGGAAC	
1518	UGUUCCUG CUGAUGAG X CGAA IGAAGCGG	CCGCTTCC T CAGGAACA	
1520	GGUGUUCC CUGAUGAG X CGAA IAGGAAGC	GCTTCCTC A GGAACACC	
1527	CUUCUUGG CUGAUGAG X CGAA IUUCCUGA	TCAGGAAC A CCAAGAAG	
1528	AACUUCUU CUGAUGAG X CGAA IUGUUCCU	AGGAACAC C AAGAAGTT	
1529	GAACUUCU CUGAUGAG X CGAA IGUGUUCC	GGAACACC A AGAAGTTC	
1537	CAGGGAGA CUGAUGAG X CGAA IAACUUCU	AGAAGTTC A TCTCCCTG	
1541	CCCCAGGG CUGAUGAG X CGAA IAUGAACU	AGTTCATC T CCCTGGGG	
1542	UUCCCCAG CUGAUGAG X CGAA IAGAUGAA	TTCATCTC C CTGGGGAA	
1544	CUUCCCCA CUGAUGAG X CGAA IGAGAUGA	TCATCTCC C TGGGGAAG	
1549	GCUUCCCC CUGAUGAG X CGAA IGGAGAUG	CATCTCCC T GGGGAAGC	
1554	GCUUGGCA CUGAUGAG X CGAA ICUUCCCC	GGGGAAGC A TGCCAAGC	
1555	GAGAGCUU CUGAUGAG X CGAA ICAUGCUU	AAGCATGC C AAGCTCTC	
1559	CGAGAGCU CUGAUGAG X CGAA IGCAUGCU	AGCATGCC A AGCTCTCG	
1564	GCAGCGAG CUGAUGAG X CGAA ICUUGGCA	TGCCAAGC T CTCGCTGC	
1565	CUGCAGCG CUGAUGAG X CGAA IAGCUUGG	CCAAGCTC T CGCTGCAG	
1569	GCUCCUGC CUGAUGAG X CGAA ICGAGAGC	GCTCTCGC T GCAGGAGC	
1571	UCAGCUCC CUGAUGAG X CGAA ICAGCGAG	CTCGCTGC A GGAGCTGA	
1576	UCCAGCUC CUGAUGAG X CGAA ICUCCUGC	GCAGGAGC T GACGCGGA	
1604	CCAAGCGC CUGAUGAG X CGAA IUCCCGCA	TGCGGGAC T GCGCTTGG	
1607	CGCAGCCA CUGAUGAG X CGAA ICGGCAGUC	GACTGCGC T TGGCTGCG	
1614	UCCUGCGC CUGAUGAG X CGAA ICCCAAGCG	CGCTTGGC T GCGCAGGA	
1619	UGGGCUCC CUGAUGAG X CGAA ICGGCAGCC	GGCTGCGC A GGAGCCCA	
1625	AACCCCUG CUGAUGAG X CGAA ICUUCCUGC	GCAGGAGC C CAGGGGTT	
1626	CAACCCCU CUGAUGAG X CGAA IGCUUCCUG	CAGGAGCC C AGGGGTTG	
1627	CCAACCCC CUGAUGAG X CGAA IGGCUUCCU	AGGAGCCC A GGGGTTGG	
1637	CGGAACAC CUGAUGAG X CGAA ICCAACCC	GGGTTGGC T GTGTTCCG	
1644	CUGCGGCC CUGAUGAG X CGAA IAACACAG	CTGTGTTC C GGCCGCAG	
1648	UGCUCUGC CUGAUGAG X CGAA ICCGGAAC	GTTCCGGC C GCAGAGCA	
1651	CGGUGCUC CUGAUGAG X CGAA ICGGCCGG	CCGGCCGC A GAGCACCG	
1656	GCAGAGGG CUGAUGAG X CGAA ICUCUGCG	CGCAGAGC A CCGTCTGC	
1658	AGGCAGAC CUGAUGAG X CGAA IUGCUCUG	CAGACAC C GTCTGCGT	
1660	CCUCACGC CUGAUGAG X CGAA IACGGUGC	GCACCGTC T GCGTGAGG	
1676	CUUGGCCA CUGAUGAG X CGAA IAUCUCCU	AGGAGATC C TGGCCAAG	
1677	ACUUGGCC CUGAUGAG X CGAA IGAUCUCC	GGAGATCC T GGCCAAGT	
1681	AGGAACUU CUGAUGAG X CGAA ICCAGGAU	ATCCTGGC C AAGTTCCT	
1680	CAGGAACU CUGAUGAG X CGAA IGCCAGGA	TCCTGGCC A AGTTCCTG	
1688	CCAGUGCA CUGAUGAG X CGAA IAACUUGG	CCAAGTTC C TGCACTGG	
1689	GCCAGUGC CUGAUGAG X CGAA IGAACUUG	CAAGTTCC T GCACTGGC	
1692	UCAGCCAG CUGAUGAG X CGAA ICAGGAAC	GTTCCTGC A CTGGCTGA	

1694	CAUCAGCC CUGAUGAG X CGAA IUGCAGGA		TCCTGCAC T GGCTGATG	
1698	CACUCAUC CUGAUGAG X CGAA ICCAGUGC		GCACTGGC T GATGAGTG	
1722	ACCUGAGC CUGAUGAG X CGAA ICUCGAGG		CGTCGCC T GCTCAGGT	
1725	AAGACCUG CUGAUGAG X CGAA ICAGCUCG		CGAGCTGC T CAGGTCTT	
1727	GAAAGACC CUGAUGAG X CGAA IAGCAGCU		AGCTGCTC A GGTCTTTC	
1732	UAAAAGAA CUGAUGAG X CGAA IACCUGAG		CTCAGGTC T TTCTTTTA	
1736	GACAUAAA CUGAUGAG X CGAA IAAAGACC		GGTCTTTC T TTTATGTC	
1745	GGUCUCCG CUGAUGAG X CGAA IACAUAAA		TTTATGTC A CGGAGACC	
1753	UGAAACGU CUGAUGAG X CGAA IUCUCGGU		ACGGAGAC C ACGTTTCA	
1754	UUGAAACG CUGAUGAG X CGAA IGUCUCGG		CGGAGACC A CGTTTCAA	
1761	UGUUCUUU CUGAUGAG X CGAA IAAACGUG		CACGTTTC A AAAGAACA	
1764	AAAGACCC CUGAUGAG X CGAA IUUUCUUU		AAAAGAAC A GGCTCTTT	
1772	AGAAAAAG CUGAUGAG X CGAA ICCUGUUC		GAACAGGC T CTTTTTCT	
1775	GUAGAAAA CUGAUGAG X CGAA IAGCCUGU		ACAGGCTC T TTTCTAC	
1781	CUUCGGU CUGAUGAG X CGAA IAAAAAGA		TCTTTTTC T ACGGAAG	
1784	ACUCUUCC CUGAUGAG X CGAA IUAGAAAA		TTTTCTAC C GGAAGAGT	
1792	CUUGCUCC CUGAUGAG X CGAA IACACUCU		AGAGTGTC T GGAGCAAG	
1802	UUGCAACU CUGAUGAG X CGAA ICUCCAGA		TCTGGAGC A AGTGCAA	
1809	CAAUGCUU CUGAUGAG X CGAA ICAACUUG		CAAGTTGC A AAGCATTG	
1814	GAUUCCAA CUGAUGAG X CGAA ICUUUGCA		TGCAAAGC A TTGGAATC	
1823	GUGCUGUC CUGAUGAG X CGAA IAUUCCAA		TTGGAATC A GACAGCAC	
1827	UCAAGUGC CUGAUGAG X CGAA IUCUGAUU		AATCAGAC A GCACTTGA	
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1832	CCUCUUCA CUGAUGAG X CGAA IUGCUGUC		GACAGCAC T TGAAGAGG	
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1848	GCUCCCGC CUGAUGAG X CGAA ICUGCACC		GGTGCAGC T GCGGGAGC	
1857	CUUCCGAC CUGAUGAG X CGAA ICUCCCGC		GCGGGAGC T GTCGGAAG	
1867	CUGACCUC CUGAUGAG X CGAA ICUUCCGA		TCGGAAGC A GAGGTCAG	
1874	AUGCUGCC CUGAUGAG X CGAA IACCUCUG		CAGAGGTC A GGCAGCAT	
1878	CCCGAUGC CUGAUGAG X CGAA ICCUGACC		GGTCAGGC A GCATCGGG	
1881	CUUCCCGA CUGAUGAG X CGAA ICUGCCUG		CAGGCAGC A TCGGGAAG	
1891	GCGGGCCU CUGAUGAG X CGAA ICUUCCCG		CGGGAAGC C AGGCCCGC	
1892	GGCGGGCC CUGAUGAG X CGAA IGCUUCCC		GGGAAGCC A GGCCCGCC	
1894	GCAGGGCG CUGAUGAG X CGAA ICCCUGGCU		AGCCAGGC C CGCCCTGC	
1897	AGCAGGGC CUGAUGAG X CGAA IGCCCUGGC		GCCAGGCC C GCCCTGCT	
1900	GUCAGCAG CUGAUGAG X CGAA ICGGGCCU		AGGCCCGC C CTGCTGAC	
1901	CGUCAGCA CUGAUGAG X CGAA IGCGGGCC		GGCCCGCC C TGCTGACG	
1902	ACGUCAGC CUGAUGAG X CGAA IGGCGGGC		GCCCGCCC T GCTGACGT	
1905	UGGACGUC CUGAUGAG X CGAA ICAGGGCG		CGCCCTGC T GACGTCCA	
1911	CGGAGUCU CUGAUGAG X CGAA IACGUCAG		CTGACGTC C AGACTCCG	
1913	GCGGAGUC CUGAUGAG X CGAA IGACGUCA		TGACGTCC A GACTCCGC	
1917	UGAAGCGG CUGAUGAG X CGAA IUCUGGAC		GTCCGGAC T CCGCTTCA	
1919	GAUGAAGC CUGAUGAG X CGAA IAGUCUGG		CCAGACTC C GCTTCATC	
1921	GGGGAUGA CUGAUGAG X CGAA ICGGAGUC		GACTCCGC T TCATCCCC	
1925	CUUGGGGA CUGAUGAG X CGAA IAAGCGGA		TCCGCTTC A TCCCCAAG	
1928	AGGCUUGG CUGAUGAG X CGAA IAUGAAGC		GCTTCATC C CCAAGCCT	
1929	CAGGCUUG CUGAUGAG X CGAA IGAUGAAG		CTTCATCC C CAAGCCTG	

1930	UCAGGCUU CUGAUGAG X CGAA IGGAUGAA		TTCATCCC C AAGCCTGA	
1931	GUCAGGCU CUGAUGAG X CGAA IGGAUGA		TCATCCCC A AGCCTGAC	
1935	GCCCGUCA CUGAUGAG X CGAA ICUUGGGC		CCCAAGC C TGACGGGC	
1936	AGCCCGUC CUGAUGAG X CGAA IGCUUGGG		CCCAAGCC T GACGGGCT	
1944	UCGGCCGC CUGAUGAG X CGAA ICCCGUCA		TGACGGGC T GCGGCCGA	
1950	UCACAAUC CUGAUGAG X CGAA ICCGCAGC		GCTGCGGC C GATTGTGA	
1961	GUAGUCCA CUGAUGAG X CGAA IUUGACAA		TTGTGAAC A TGGACTAC	
1967	CACGAGGU CUGAUGAG X CGAA IUCCAUGU		ACATGGAC T ACGTCGTG	
1981	AACGUUCU CUGAUGAG X CGAA IGUCCCAC		GTGGGAGC C AGAACGTT	
1982	GAACGUUC CUGAUGAG X CGAA IGCUCCCA		TGGGAGCC A GAACGTTC	
1991	UUCUCUGC CUGAUGAG X CGAA IAACGUUC		GAACGTTC C GCAGAGAA	
1994	CUUUUCUC CUGAUGAG X CGAA ICGGAACG		CGTTCCGC A GAGAAAAG	
2008	AGAGGCUC CUGAUGAG X CGAA ICCCUCUU		AAGAGGGC C GAGCGTCT	
2016	UCGAGGUG CUGAUGAG X CGAA IACGCUCG		CGAGCGTC T CAGCTCGA	
2018	CCUCGAGG CUGAUGAG X CGAA IAGACGCU		AGCGTCTC A GCTCGAGG	
2040	ACCCUCGA CUGAUGAG X CGAA IUGAGACG		CGTCTCAC C TCGAGGGT	
2041	CACCCUCG CUGAUGAG X CGAA IGUGAGAC		GTCTCACC T CGAGGGTG	
2055	CUGAACAG CUGAUGAG X CGAA ICCUUCAC		GTGAAGGC A CTGTTCAG	
2057	CGCUGAAC CUGAUGAG X CGAA IUGGCUUC		GAAGGCAC T GTTCAGCG	
2042	GAGCACGC CUGAUGAG X CGAA IAACAGUG		CACTGTTC A GCGTGCTC	
2049	CGUAGUUG CUGAUGAG X CGAA ICACGCUG		CAGCGTGC T CAACTACG	
2052	CUCGUAGU CUGAUGAG X CGAA IAGCACGC		GCGTGCTC A ACTACGAG	
2054	CCCGCUCGU CUGAUGAG X CGAA IUUGAGCA		TGCTCAAC T ACGAGCGG	
2072	GAGGCGGG CUGAUGAG X CGAA ICGGCGCG		CGCGGCGC C CCGGCCTC	
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2074	AGGAGGCC CUGAUGAG X CGAA IGGCGGCG		CGGCGCCC C GGCCTCCT	
2078	GCCCAGGA CUGAUGAG X CGAA ICCGGGGC		GCCCCGGC C TCCTGGGC	
2079	CGCCCAGG CUGAUGAG X CGAA IGCCGGGG		CCCCGGCC T CCTGGGCG	
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2082	AGGCGCCC CUGAUGAG X CGAA IGAGGCCG		CGGCCTCC T GGGCGCCT	
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2090	CAGCACAG CUGAUGAG X CGAA IGCGCCCA		TGGGCGCC T CTGTGCTG	
2092	CCCAGCAC CUGAUGAG X CGAA IAGGGCGC		GGGCGCTC T GTGCTGGG	
2097	CCAGGCCC CUGAUGAG X CGAA ICACAGAG		CTCTGTGC T GGGCCTGG	
2102	AUCGUCCA CUGAUGAG X CGAA ICCCAGCA		TGCTGGGC C TGGACGAT	
2105	UAUCGUCC CUGAUGAG X CGAA IGCCCAGC		GCTGGGCC T GGACGATA	
2114	GGCCCUGU CUGAUGAG X CGAA IAUAUCGU		ACGATATC C ACAGGGCC	
2116	AGGCCCUG CUGAUGAG X CGAA IGAUAUCG		CGATATCC A CAGGGCCT	
2117	CCAGGCCC CUGAUGAG X CGAA IUGGAUAU		ATATCCAC A GGGCCTGG	
2122	GUGCGCCA CUGAUGAG X CGAA ICCCUGUG		CACAGGGC C TGGCGCAC	
2123	GGUGCGCC CUGAUGAG X CGAA IGCCCUGU		ACAGGGCC T GGCGCACC	
2129	CACGAAGG CUGAUGAG X CGAA ICGCCAGG		CCTGGCGC A CCTTCGTG	
2131	AGCACGAA CUGAUGAG X CGAA IUGCGCCA		TGGCGCAC C TTCGTGCT	
2132	CAGCACGA CUGAUGAG X CGAA IGUGCGCC		GGCGCACC T TCGTGCTG	
2139	GCACACGG CUGAUGAG X CGAA ICACGAAG		CTTCGTGC T GCGTGTGC	
2152	GGGUCCUG CUGAUGAG X CGAA ICCCGCAC		GTGCGGGC C CAGGACCC	
2153	CGGGUCCU CUGAUGAG X CGAA IGCCCGCA		TGCGGGCC C AGGACCCG	

2154	GCGGGUCC CUGAUGAG X CGAA IGGCCCGC	GCGGGCCC A GGACCCGC
2159	AGGCGGCG CUGAUGAG X CGAA IUCCUGGG	CCCAGGAC C CGCCGCCT
216.	CAGGCGGC CUGAUGAG X CGAA IGUCCUGG	CCAGGACC C GCCGCCTG
216.	GCUCAGGC CUGAUGAG X CGAA ICGGGUCC	GGACCCGC C GCCTGAGC
2159	ACAGCUCA CUGAUGAG X CGAA ICGGCGGG	CCCGCCGC C TGAGCTGT
2167	UACAGCUC CUGAUGAG X CGAA IGCGGCGG	CCGCCGCC T GAGCTGTA
2172	CAAAGUAC CUGAUGAG X CGAA ICUCAGGC	GCCTGAGC T GTACTTTG
2177	CUUGACAA CUGAUGAG X CGAA IUACAGCU	AGCTGTAC T TTGTCAAG
218.	AUCCACCU CUGAUGAG X CGAA IACAAAGU	ACTTTGTC A AGGTGGAT
220.	GGGGAUGG CUGAUGAG X CGAA IUGGUACG	CGTACCAC A CCATCCCC
2213	UGGGGGAU CUGAUGAG X CGAA IUGUCGUA	TACGACAC C ATCCCCA
2213	CUGGGGGA CUGAUGAG X CGAA IGUGUCGU	ACGACACC A TCCCCAG
2214	GUCCUGGG CUGAUGAG X CGAA IAUGGUGU	ACACCATC C CCCAGGAC
2217	UGUCCUGG CUGAUGAG X CGAA IGAUGGUG	CACCATCC C CCAGGACA
2218	CUGUCCUG CUGAUGAG X CGAA IGGAUGGU	ACCATCCC C CAGGACAG
2219	CCUGUCCU CUGAUGAG X CGAA IGGGAUGG	CCATCCCC C AGGACAGG
222.	GCCUGUCC CUGAUGAG X CGAA IGGGGAUG	CATCCCCC A GGACAGGC
222.	CGGUAGCC CUGAUGAG X CGAA IUCCUGGG	CCCAGGAC A GGCTCACG
222.	CCUCCGUG CUGAUGAG X CGAA ICCUGUCC	GGACAGGC T CACGGAGG
2231	GACCUCCG CUGAUGAG X CGAA IAGCCUGU	ACAGGCTC A CGGAGGTC
224.	GCUGGCGA CUGAUGAG X CGAA IACCUCCG	CCGGAGGTC A TCGCCAGC
2245	AUGAUGCU CUGAUGAG X CGAA ICGAUGAC	GTCATCGC C AGCATCAT
2246	GAUGAUGC CUGAUGAG X CGAA IGCGAUGA	TCATCGCC A GCATCATC
2247	UUUGAUGA CUGAUGAG X CGAA ICUGGCGA	TCGGCAGC A TCATCAAA
2252	GGGUUUGA CUGAUGAG X CGAA IAUGCUGG	CCAGCATC A TCAAACCC
2253	CUGGGGUU CUGAUGAG X CGAA IAUGAUGC	GCATCATC A AACCCCAG
2259	UGUUCUGG CUGAUGAG X CGAA IUUUGAUG	CATCAAAC C CCAGAACA
2260	GUGUUCUG CUGAUGAG X CGAA IGUUUGAU	ATCAAACC C CAGAACAC
2261	CGUGUUCU CUGAUGAG X CGAA IGGUUUGA	TCAAACCC C AGAACACG
2262	ACGUGUUC CUGAUGAG X CGAA IGGGUUUG	CAAACCCC A GAACACGT
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2273	ACGCACGC CUGAUGAG X CGAA IUACGUGU	ACACGTAC T GCGTGCGT
2290	UGGACCAC CUGAUGAG X CGAA ICAUACGC	CGGTATGC C GTGGTCCA
2297	GGCCUUCU CUGAUGAG X CGAA IACCACGG	CCGTGGTC C AGAAGGCC
2298	CGGCCUUC CUGAUGAG X CGAA IGACCACG	CGTGGTCC A GAAGGCCG
2305	CCAUGGGC CUGAUGAG X CGAA ICCUUCUG	CAGAAGGC C GGCCATGG
2308	UGCCCAUG CUGAUGAG X CGAA ICGGCCUU	AAGGCCGC C CATGGGCA
2309	GUGCCCAU CUGAUGAG X CGAA IGCGGCCU	AGGCCGCC C ATGGGCAC
2315	CGUGCCCA CUGAUGAG X CGAA IGGCGGCC	GGCCGCCC A TGGGCACG
2316	UGCGGACG CUGAUGAG X CGAA ICCCAUGG	CCATGGGC A CGTCCGCA
2321	GGCCUUGC CUGAUGAG X CGAA IACUUGCC	GGCACGTC C GCAAGGCC
2324	GAAGGCCU CUGAUGAG X CGAA IGGGACGU	ACGTCCGC A AGGCCTTC
2327	CUCUUGAA CUGAUGAG X CGAA ICCUUGCG	CGCAAGGC C TTCAAGAG
2330	GCUCUUGA CUGAUGAG X CGAA IGCCUUGC	GCAAGGCC T TCAAGAGC
2335	GUGGCUCU CUGAUGAG X CGAA IAAGGCCU	AGGCCTTC A AGAGCCAC
2337	AGAGACGU CUGAUGAG X CGAA ICUCUUGA	TCAAGAGC C ACGTCTCT
2340	UAGAGACG CUGAUGAG X CGAA IGCUCUUG	CAAGAGCC A CGTCTCTA

2345	CAAGGUAG CUGAUGAG X CGAA IACGUGGC		GCCACGTC T CTACCTTG	
2347	GUCAAGGU CUGAUGAG X CGAA IAGACGUG		CACGTCTC T ACCTTGAC	
2350	UCUGUCAA CUGAUGAG X CGAA IUAGAGAC		GTCTCTAC C TTGACAGA	
2351	GUCUGUCA CUGAUGAG X CGAA IGUAGAGA		TCTCTACC T TGACAGAC	
2356	UGGAGGUC CUGAUGAG X CGAA IUCAAGGU		ACCTTGAC A GAGCTCCA	
2360	CGGCUGGA CUGAUGAG X CGAA IUCUGUCA		TGACAGAC C TCCAGCCG	
2361	ACGGCUGG CUGAUGAG X CGAA IGUCUGUC		GACAGACC T CCAGCCGT	
2363	GUACGGCU CUGAUGAG X CGAA IAGGCUGG		CAGACCTC C AGCCGTAC	
2364	UGUACGGC CUGAUGAG X CGAA IGAGGCUG		AGACCTCC A GCCGTACA	
2367	GCAUGUAC CUGAUGAG X CGAA ICUGGAGG		CCTCCAGC C GTACATGC	
2372	CUGUGGCA CUGAUGAG X CGAA IUACGGCU		AGCCGTAC A TGCACAG	
2379	CCACGAAC CUGAUGAG X CGAA IUGGCAUG		CATGCGAC A GTTCGTGG	
2399	UGCAGGUG CUGAUGAG X CGAA ICCACGAA		TTCGTGGC T CACCTGCA	
2371	CCUGCAGG CUGAUGAG X CGAA IAGCCACG		CGTGGCTC A CCTGCAGG	
2393	CUCCUGCA CUGAUGAG X CGAA IUGAGCCA		TGGCTCAC C TGCAGGAG	
2394	UCUCCUGC CUGAUGAG X CGAA IGUGAGCC		GGCTCACC T GCAGGAGA	
2397	UGGUCUCC CUGAUGAG X CGAA ICAGGUGA		TCACCTGC A GGAGACCA	
2404	AGCGGGCU CUGAUGAG X CGAA IUCUCCUG		CAGGAGAC C AGCCCGCT	
2406	CAGCGGGC CUGAUGAG X CGAA IGUCUCCU		AGGAGACC A GCCCGCTG	
2408	CCUCAGCG CUGAUGAG X CGAA ICUGGGUCU		AGACCAGC C CGCTGAGG	
2409	CCCUCAGC CUGAUGAG X CGAA IGCUGGGUC		GACCAGCC C GCTGAGGG	
2412	CAUCCCUC CUGAUGAG X CGAA ICGGGCUG		CAGCCGC T GAGGGATG	
2422	AUGACGAC CUGAUGAG X CGAA ICAUCCCU		AGGGATGC C GTCGTCAT	
2429	CUGCUGGA CUGAUGAG X CGAA IACGACGG		CCGTCGTC A TCGAGCAG	
2436	AGGAGCUC CUGAUGAG X CGAA ICUGGAUG		CATCGAGC A GAGCTCCT	
2441	CAGGAGG CUGAUGAG X CGAA ICUCUGCU		AGCAGAGC T CCTCCTG	
2443	UUCAGGGA CUGAUGAG X CGAA IAGCUCUG		CAGAGCTC C TCCCTGAA	
2444	AUUCAGGG CUGAUGAG X CGAA IGAGCUCU		AGAGCTCC T CCCTGAAT	
2446	UCAUUCAG CUGAUGAG X CGAA IAGGAGCU		AGCTCCTC C CTGAATGA	
2447	CUCAUUCA CUGAUGAG X CGAA IGAGGAGC		GCTCCTCC C TGAATGAG	
2448	CCUCAUUC CUGAUGAG X CGAA IGGAGGAG		CTCCTCCC T GAATGAGG	
2458	CCACUGCU CUGAUGAG X CGAA ICCUCAUU		AATGAGGC C AGCAGTGG	
2459	GCCACUGC CUGAUGAG X CGAA IGCCUCAU		ATGAGGCC A GCAGTGGC	
2462	GAGGCCAC CUGAUGAG X CGAA ICUGGCCU		AGGCCAGC A GTGGCCTC	
2463	GUCGAAGA CUGAUGAG X CGAA ICCACUGC		GCAGTGGC C TCTTCGAC	
2469	CGUCGAAG CUGAUGAG X CGAA IGCCACUG		CAGTGGCC T CTTCGACG	
2471	GACGUCGA CUGAUGAG X CGAA IAGGCCAC		GTGGCCTC T TCGACGTC	
2490	GCGUAGGA CUGAUGAG X CGAA IACGUCGA		TCGACGTC T TCCTACGC	
2493	GAAGCGUA CUGAUGAG X CGAA IAAGACGU		ACGTCTTC C TACGCTTC	
2494	UGAAGCGU CUGAUGAG X CGAA IGAAGACG		CGTCTTCC T ACGCTTCA	
2499	GCACAUGA CUGAUGAG X CGAA ICGUAGGA		TCCTACGC T TCATGTGC	
2492	GUGGCACA CUGAUGAG X CGAA IAAGCGUA		TACGCTTC A TGTGCCAC	
2498	GGCGUGGU CUGAUGAG X CGAA ICACAUGA		TCATGTGC C ACCACGCC	
2499	CGGCGUGG CUGAUGAG X CGAA IGCACAUG		CATGTGCC A CCACGCCG	
2501	CACGGCGU CUGAUGAG X CGAA IUGGCACA		TGTGCCAC C ACGCCGTG	
2502	GCACGGCG CUGAUGAG X CGAA IGUGGCAC		GTGCCACC A CGCCGTGC	
2506	AUGCGCAC CUGAUGAG X CGAA ICGUGGUG		CACCACGC C GTGCGCAT	

2513	GCCCCUGA CUGAUGAG X CGAA ICGCACGG		CCGTGCGC A TCAGGGGC	
2516	CUUGCCC CUGAUGAG X CGAA IAUGCGCA		TGCGCATC A GGGGCAAG	
2522	GUAGGACU CUGAUGAG X CGAA ICGCCUGA		TCAGGGGC A AGTCCTAC	
2527	UGGACGUA CUGAUGAG X CGAA IACUUGCC		GGCAAGTC C TACGTCCA	
2528	CUGGACGU CUGAUGAG X CGAA IGACUUGC		GCAAGTCC T ACGTCCAG	
2534	CUGGCACU CUGAUGAG X CGAA IACGUAGG		CCTACGTC C AGTGCCAG	
2535	CCUGGCAC CUGAUGAG X CGAA IGACGUAG		CTACGTCC A GTGCCAGG	
2540	GAUCCCCU CUGAUGAG X CGAA ICACUGGA		TCCAGTGC C AGGGGATC	
2542	GGAUCCCC CUGAUGAG X CGAA IGCACUGG		CCAGTGCC A GGGGATCC	
2549	GCCCUGCG CUGAUGAG X CGAA IAUCCCCU		AGGGGATC C CGCAGGGC	
2550	AGCCCUGC CUGAUGAG X CGAA IGAUCCCC		GGGGATCC C GCAGGGCT	
2553	UGGAGCCC CUGAUGAG X CGAA ICGGGAUC		GATCCCGC A GGGCTCCA	
2558	GAGGAUGG CUGAUGAG X CGAA ICCCUGCG		CGCAGGGC T CCATCCTC	
2560	GAGAGGAU CUGAUGAG X CGAA IAGCCCUG		CAGGGCTC C ATCCTCTC	
2561	GGAGAGGA CUGAUGAG X CGAA IGAGCCCU		AGGGCTCC A TCCTCTCC	
2564	CGUGGAGA CUGAUGAG X CGAA IAUGGAGC		GCTCCATC C TCTCCACG	
2565	GCGUGGAG CUGAUGAG X CGAA IGAUGGAG		CTCCATCC T CTCCACGC	
2567	CAGCGUGG CUGAUGAG X CGAA IAGGAUGG		CCATCCTC T CCACGCTG	
2569	AGCAGCGU CUGAUGAG X CGAA IAGAGGAU		ATCCTCTC C ACGCTGCT	
2570	GAGCAGCG CUGAUGAG X CGAA IGAGAGGA		TCCTCTCC A CGCTGCTC	
2574	UGCAGAGC CUGAUGAG X CGAA ICGUGGAG		CTCCACGC T GCTCTGCA	
2577	GGCUGCAG CUGAUGAG X CGAA ICAGCGUG		CACGCTGC T CTGCAGCC	
2579	CAGGCUGC CUGAUGAG X CGAA IAGCAGCG		CGCTGCTC T GCAGCCTG	
2580	GCACAGGC CUGAUGAG X CGAA ICAGAGCA		TGCTCTGC A GCCTGTGC	
2585	GUAGCACA CUGAUGAG X CGAA ICUGCAGA		TCTGCAGC C TGTGCTAC	
2586	CGUAGCAC CUGAUGAG X CGAA IGCUGCAG		CTGCAGCC T GTGCTACG	
2591	GUCGCCGU CUGAUGAG X CGAA ICACAGGC		GCCTGTGC T ACGGCGAC	
2600	GUUCUCCA CUGAUGAG X CGAA IUCGCCGU		ACGGCGAC A TGGAGAAC	
2609	AAACGCU CUGAUGAG X CGAA IUUCUCCA		TGGAGAAC A AGCTGTTT	
2613	CCGCAAAC CUGAUGAG X CGAA ICUUGUUC		GAACAAGC T GTTTGCGG	
2640	GCAGGAGC CUGAUGAG X CGAA ICCCGUCC		GGACGGGC T GCTCCTGC	
2643	AACGCAGG CUGAUGAG X CGAA ICAGCCCG		CGGGCTGC T CCTGCGTT	
2645	CAAACGCA CUGAUGAG X CGAA IAGCAGCC		GGCTGCTC C TGCGTTTG	
2646	CCAAACGC CUGAUGAG X CGAA IGAGCAGC		GCTGCTCC T GCGTTTGG	
2666	CACCAACA CUGAUGAG X CGAA IAAAUCAU		ATGATTTC T TGTTGGTG	
2677	AGGUGAGG CUGAUGAG X CGAA IUCACCAA		TTGGTGAC A CCTCACCT	
2679	UGAGGUGA CUGAUGAG X CGAA IUGUCACC		GGTGACAC C TCACCTCA	
2680	GUGAGGUG CUGAUGAG X CGAA IGUGUCAC		GTGACACC T CACCTCAC	
2682	GGGUGAGG CUGAUGAG X CGAA IAGGUGUC		GACACCTC A CCTCACCC	
2684	GUGGGUGA CUGAUGAG X CGAA IUGAGGUG		CACCTCAC C TCACCCAC	
2685	CGUGGGUG CUGAUGAG X CGAA IGUGAGGU		ACCTCACC T CACCCACG	
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2689	UUCGCGUG CUGAUGAG X CGAA IUGAGGUG		CACCTCAC C CACGCGAA	
2690	UUUCGCGU CUGAUGAG X CGAA IGUGAGGU		ACCTCACC C ACGCGAAA	
2691	UUUUCGCG CUGAUGAG X CGAA IGGUGAGG		CCTCACCC A CGCGAAAA	
2701	CUGAGGAA CUGAUGAG X CGAA IUUUUCGC		GCGAAAAC C TTCCTCAG	
2702	CCUGAGGA CUGAUGAG X CGAA IGUUUUCG		CGAAAACC T TCCTCAGG	

2705	GGUCCUGA CUGAUGAG X CGAA IAAGGUUU		AAACCTTC C TCAGGACC	
2706	GGGUCCUG CUGAUGAG X CGAA IGAAGGUU		AACCTTCC T CAGGACCC	
2708	CAGGGUCC CUGAUGAG X CGAA IAGGAAGG		CCTTCCTC A GGACCCTG	
2713	CGGACCAG CUGAUGAG X CGAA IUCCUGAG		CTCAGGAC C CTGGTCCG	
2714	UCGGACCA CUGAUGAG X CGAA IGUCCUGA		TCAGGACC C TGGTCCGA	
2715	CUCGGACC CUGAUGAG X CGAA IGGUCCUG		CAGGACCC T GGTCCCAG	
2720	GACACCUC CUGAUGAG X CGAA IACCAGGG		CCCTGGTC C GAGGTGTC	
2729	AUACUCAG CUGAUGAG X CGAA IACACCUC		GAGGTGTC C CTGAGTAT	
2730	CAUACUCA CUGAUGAG X CGAA IGACACCU		AGGTGTCC C TGAGTATG	
2731	CCAUACUC CUGAUGAG X CGAA IGGACACC		GGTGTCCC T GAGTATGG	
2741	CACCACGC CUGAUGAG X CGAA ICCAUACU		AGTATGGC T GCGTGGTG	
2763	CUUCCGCA CUGAUGAG X CGAA IUUCACCA		TGGTGAAC T TGCGGAAG	
2764	UUCACCAC CUGAUGAG X CGAA IUCUUCCG		CGGAAGAC A GTGGTGAA	
2774	UACAGGGA CUGAUGAG X CGAA IUUCACCA		TGGTGAAC T TCCCTGTA	
2777	UUCUACAG CUGAUGAG X CGAA IAAGUUCA		TGAACTTC C CTGTAGAA	
2778	CUUCUACA CUGAUGAG X CGAA IGAAGUUC		GAACTTCC C TGTAGAAG	
2779	UCUUCUAC CUGAUGAG X CGAA IGGAAGUU		AACTTCCC T GTAGAAGA	
2794	CCACCCAG CUGAUGAG X CGAA ICCUCGUC		GACGAGGC C CTGGGTGG	
2795	GCCACCCA CUGAUGAG X CGAA IGCCUCGU		ACGAGGCC C TGGGTGGC	
2796	UGCCACCC CUGAUGAG X CGAA IGGCCUCG		CGAGGCCC T GGGTGGCA	
2804	AAAAGCCG CUGAUGAG X CGAA ICCACCCA		TGGGTGGC A CGGCTTTT	
2809	UGAACAAA CUGAUGAG X CGAA ICCGUGCC		GGCACGGC T TTTGTTCA	
2817	CCGGCAUC CUGAUGAG X CGAA IAACAAAA		TTTTGTTC A GATGCCGG	
2823	CGUGGGCC CUGAUGAG X CGAA ICAUCUGA		TCAGATGC C GGCCCACG	
2827	AGGCCGUG CUGAUGAG X CGAA ICCGGCAU		ATGCCGGC C CACGGCCT	
2828	UAGGCCGU CUGAUGAG X CGAA IGCCGGCA		TGCCGGCC C ACGGCCTA	
2829	AUAGGCCG CUGAUGAG X CGAA IGGCCGGC		GCCGGCCC A CGGCCTAT	
2834	GGGAAUA CUGAUGAG X CGAA ICCGUGGG		CCCACGGC C TATCCCC	
2835	AGGGGAAU CUGAUGAG X CGAA IGCCGUGG		CCACGGCC T ATCCCCT	
2840	GCACCAGG CUGAUGAG X CGAA IAAUAGGC		GCCTATTC C CCTGGTGC	
2841	CGCACCAG CUGAUGAG X CGAA IGAAUAGG		CCTATTCC C CTGGTGCG	
2842	CCGCACCA CUGAUGAG X CGAA IGGAAUAG		CTATTCCC C TGGTGCGG	
2843	GCCGCACC CUGAUGAG X CGAA IGGGAAUA		TATTCCCC T GGTGCGGC	
2852	CAGCAGCA CUGAUGAG X CGAA ICCGCACC		GGTGCGGC C TGCTGCTG	
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2856	UAUCCAGC CUGAUGAG X CGAA ICAGGCCG		CGGCCTGC T GCTGGATA	
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2867	CAGGGUCC CUGAUGAG X CGAA IGUAUCCA		TGGATACC C GGACCCTG	
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2873	CACCUCCA CUGAUGAG X CGAA IGUCCGGG		CCCGGACC C TGGAGGTG	
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2883	AGUCGCUC CUGAUGAG X CGAA ICACCUCC		GGAGGTGC A GAGCGACT	
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2894	AUAGCUGG CUGAUGAG X CGAA IUAGUCGC		GCGACTAC T CCAGCTAT	
2896	GCAUAGCU CUGAUGAG X CGAA IAGUAGUC		GACTACTC C AGCTATGC	
2897	GGCAUAGC CUGAUGAG X CGAA IGAGUAGU		ACTACTCC A GCTATGCC	

2900	CCGGGCAU CUGAUGAG X CGAA ICUGGAGU	ACUCCAGC T AUGCCCGG	
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2911	CUGAUGGA CUGAUGAG X CGAA IUCCGGGC	GCCCGGAC C UCCAUCAG	
2912	UCUGAUGG CUGAUGAG X CGAA IGUCCGGG	CCCGGACC U CCAUCAGA	
2914	GCUCUGAU CUGAUGAG X CGAA IAGGUCCG	CGGACCUC C AUCAGAGC	
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2918	ACUGGCUC CUGAUGAG X CGAA IAUGGAGG	CCUCCAUC A GAGCCAGU	
2924	GUGAGACU CUGAUGAG X CGAA ICUCUGAU	AUCAGAGC C AGUCUCAC	
2924	GGUGAGAC CUGAUGAG X CGAA IGCUCUGA	UCAGAGCC A GUCUCACC	
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2933	GCGGUUGA CUGAUGAG X CGAA IGUGAGAC	GUCUCACC T UCAACCGC	
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3143	GAAAAAUG CUGAUGAG X CGAA IGGGUUCU		AGAACCCC A CATTTTTC	
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3282	GGAAUGCU CUGAUGAG X CGAA IGUGGCAC		GTGCCACC A AGCATTCC	
3286	AGCAGGAA CUGAUGAG X CGAA ICUUGGUG		CACCAAGC A TTCCTGCT	
3290	CUUGAGCA CUGAUGAG X CGAA IAAUGCUU		AAGCATTC C TGCTCAAG	
3291	GCUUGAGC CUGAUGAG X CGAA IGAAUGCU		AGCATTCC T GCTCAAGC	
3294	UCAGCUUG CUGAUGAG X CGAA ICAGGAAU		ATTCCTGC T CAAGCTGA	
3296	AGUCAGCU CUGAUGAG X CGAA IAGCAGGA		TCCTGCTC A AGCTGACT	
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3317	CAGGUAGG CUGAUGAG X CGAA IACACGGU		ACCGTGTC A CCTACCTG	
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3320	UGGCACGU CUGAUGAG X CGAA IGUGACAC		GTGTCACC T ACGTGCCA	
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3333	GUGACCCC CUGAUGAG X CGAA IGAGUGGC		GCCACTCC T GGGGTCAC	
3340	GUCCUGAG CUGAUGAG X CGAA IACCCCAG		CTGGGGTC A CTCAGGAC	
3342	CUGUCCUG CUGAUGAG X CGAA IUGACCCC		GGGGTCAC T CAGGACAG	
3344	GGCUGUCC CUGAUGAG X CGAA IAGUGACC		GGTCACTC A GGACAGCC	
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3354	GCUGGCUC CUGAUGAG X CGAA IGGCUGUC		GACAGCCC A GACGCAGC	
3360	GACUCAGC CUGAUGAG X CGAA ICGUCUGG		CCAGACGC A GCTGAGTC	
3363	UCCGACUC CUGAUGAG X CGAA ICUGCGUC		GACGCAGC T GAGTCGGA	
3375	UCCCCGGG CUGAUGAG X CGAA ICUUCCGA		TCGGAAGC T CCCGGGGA	
3377	CGUCCCCG CUGAUGAG X CGAA IAGCUUCC		GGAAGCTC C CGGGGACG	
3378	UCGUCCCC CUGAUGAG X CGAA IGAGCUUC		GAAGCTCC C GGGGACGA	
3390	GGGCAGUC CUGAUGAG X CGAA ICGUCGUC		GACGACGC T GACTGCCC	
3394	UCCAGGGC CUGAUGAG X CGAA IUCAGCGU		ACGCTGAC T GCCCTGGA	
3397	GCCUCCAG CUGAUGAG X CGAA ICAGUCAG		CTGACTGC C CTGGAGGC	
3398	GGCCUCCA CUGAUGAG X CGAA IGCAGUCA		TGACTGCC C TGGAGGCC	
3399	CGGCCUCC CUGAUGAG X CGAA IGGCAGUC		GACTGCCC T GGAGGCCG	
3406	UUGGCUGC CUGAUGAG X CGAA ICCUCCAG		CTGGAGGC C GCAGCCAA	

3409	GGGUUGGC CUGAUGAG X CGAA ICGGCCUC		GAGGCCGC A GCCAACCC	
3412	GCCGGGUU CUGAUGAG X CGAA ICUGGGGC		GCCGCAGC C AACCCGGC	
3415	UGCCGGGU CUGAUGAG X CGAA IGCUGGGG		CCGCAGCC A ACCCGGCA	
3416	CAGUGCCG CUGAUGAG X CGAA IUUGGGUG		CAGCCAAC C CGGCACTG	
3417	GCAGUGCC CUGAUGAG X CGAA IGUUGGGU		AGCCAACC C GGCACTGC	
3421	GAGGGCAG CUGAUGAG X CGAA ICCGGGUU		AACCCGGC A CTGCCCTC	
3425	CUGAGGGC CUGAUGAG X CGAA IUGCCGGG		CCCGGCAC T GCCCTCAG	
3426	AGUCUGAG CUGAUGAG X CGAA ICAGUGCC		GGCACTGC C CTCAGACT	
3427	AAGUCUGA CUGAUGAG X CGAA IGCAGUGC		GCACTGCC C TCAGACTT	
3428	GAAGUCUG CUGAUGAG X CGAA IGGCAGUG		CACTGCCC T CAGACTTC	
3430	UUGAAGUC CUGAUGAG X CGAA IAGGGCAG		CTGCCCTC A GACTTCAA	
3434	GGUCUUGA CUGAUGAG X CGAA IUCUGAGG		CCTCAGAC T TCAAGACC	
3437	GAUGGUCU CUGAUGAG X CGAA IAAGUCUG		CAGACTTC A AGACCATC	
3442	UCCAGGAU CUGAUGAG X CGAA IUCUUGAA		TTCAAGAC C ATCCTGGA	
3443	GUCCAGGA CUGAUGAG X CGAA IGUCUUGA		TCAAGACC A TCCTGGAC	
3446	UCAGUCCA CUGAUGAG X CGAA IAUGGUCU		AGACCATC C TGGACTGA	
3447	AUCAGUCC CUGAUGAG X CGAA IGAUGGUC		GACCATCC T GGACTGAT	
3452	UGGCCAUC CUGAUGAG X CGAA IUCCAGGA		TCCTGGAC T GATGGCCA	
3459	GGGCGGGU CUGAUGAG X CGAA ICCAUCAG		CTGATGGC C ACCCGCCC	
3460	UGGGCGGG CUGAUGAG X CGAA IGCCAUCA		TGATGGCC A CCCGCCCA	
3462	UUGUGGGCG CUGAUGAG X CGAA IUGGGCAU		ATGGCCAC C CGCCCACA	
3463	CUGUGGGC CUGAUGAG X CGAA IGUGGGCA		TGGCCACC C GCCCACAG	
3466	UGGCUGUG CUGAUGAG X CGAA ICGGGUGG		CCACCCGC C CACAGCCA	
3467	CUGGCUGU CUGAUGAG X CGAA IGCGGGUG		CACCCGCC C ACAGCCAG	
3468	CCUGGCUG CUGAUGAG X CGAA IGGCGGGU		ACCCGCCC A CAGCCAGG	
3470	GGCCUGGC CUGAUGAG X CGAA IUGGGCGG		CCGCCCAC A GCCAGGCC	
3473	CUGGGCCU CUGAUGAG X CGAA ICUGUGGG		CCCACAGC C AGGCCGAG	
3474	UCUGGGCC CUGAUGAG X CGAA IGCUGUGG		CCACAGCC A GGCCGAGA	
3478	CUGCUCUC CUGAUGAG X CGAA ICCUGGCU		AGCCAGGC C GAGAGCAG	
3485	CUGGUGUC CUGAUGAG X CGAA ICUCUCGG		CCGAGAGC A GACACCAG	
3489	GCUGCUGG CUGAUGAG X CGAA IUCUGCUC		GAGCAGAC A CCAGCAGC	
3491	GGCCUGCU CUGAUGAG X CGAA IUGUCUGC		GCAGACAC C AGCAGCCC	
3492	AGGCCUGC CUGAUGAG X CGAA IGUGUCUG		CAGACACC A GCAGCCCT	
3495	GACAGGGC CUGAUGAG X CGAA ICUGGGUGU		ACACCAGC A GCCCTGTC	
3498	CGUGACAG CUGAUGAG X CGAA ICGUGCUGG		CCAGCAGC C CTGTCACG	
3499	GCGUGACA CUGAUGAG X CGAA IGCUGCUG		CAGCAGCC C TGTCACGC	
3500	GGCGUGAC CUGAUGAG X CGAA IGGCUGCU		AGCAGCCC T GTCACGCC	
3504	GCCCGCCG CUGAUGAG X CGAA IACAGGGC		GCCCTGTC A CGCGGGC	
3508	UAGAGCCC CUGAUGAG X CGAA ICGUGACA		TGTCACGC C GGGCTCTA	
3512	GGACGUAG CUGAUGAG X CGAA ICCCGGCG		CGCCGGGC T CTACGTCC	
3515	UGGACGU CUGAUGAG X CGAA IAGCCCGG		CCGGGCTC T ACGTCCCA	
3521	CCUCCCUG CUGAUGAG X CGAA IACGUAGA		TCTACGTC C CAGGGAGG	
3522	CCCUCCCU CUGAUGAG X CGAA IGACGUAG		CTACGTCC C AGGGAGGG	
3523	UCCCUCCC CUGAUGAG X CGAA IGGACGUA		TACGTCCC A GGGAGGGA	
3540	UGGGUGUG CUGAUGAG X CGAA ICCGCCCC		GGGGCGGC C CACACCCA	
3541	CUGGGUGU CUGAUGAG X CGAA IGCCGCCC		GGGGCGGCC C ACACCCAG	
3542	CCUGGGUG CUGAUGAG X CGAA IGGCCGCC		GGCGGCCC A CACCCAGG	

3544	GGCCUGGG CUGAUGAG X CGAA IUGGGCCG			CGGCCCAC A CCCAGGCC	
3546	CGGGCCUG CUGAUGAG X CGAA IUGUGGGC			GCCCACAC C CAGGCCCG	
3547	GCGGGCCU CUGAUGAG X CGAA IGUGUGGG			CCCACACC C AGGCCCGC	
3548	UGCGGGCC CUGAUGAG X CGAA IGGUGUGG			CCACACCC A GGCCCGCA	
3550	GCGGUGCG CUGAUGAG X CGAA ICCUGGGU			ACCCAGGC C CGCACGGC	
3553	AGCGGUGC CUGAUGAG X CGAA IGCCUGGG			CCCAGGCC C GCACGGCT	
3556	CCCAGCGG CUGAUGAG X CGAA IGGGCCU			AGGCCCGC A CCGCUGGG	
3558	CUCCCAGC CUGAUGAG X CGAA IUGCGGGC			GCCCGCAC C GCUGGGAG	
3561	AGACUCCC CUGAUGAG X CGAA ICGGUGCG			CGCACGGC T GGGAGTCT	
3569	CAGGCCUC CUGAUGAG X CGAA IACUCCCA			TGGGAGTC T GAGGCCTG	
3575	CUCACUCA CUGAUGAG X CGAA ICCUCAGA			TCTGAGGC C TGAGTGAG	
3576	ACUCACUC CUGAUGAG X CGAA IGCCUCAG			CTGAGGCC T GAGTGAGT	
3592	CAGGCCUC CUGAUGAG X CGAA ICCAAACA			TGTTTGGC C GAGGCCTG	
3598	GACAUGCA CUGAUGAG X CGAA ICCUCGGC			GCCGAGGC C TGCATGTC	
3599	GGACAUGC CUGAUGAG X CGAA IGCCUCGG			CCGAGGCC T GCATGTCC	
3601	GCCGGACA CUGAUGAG X CGAA ICAGGCCU			AGGCCTGC A TGTCCGGC	
3607	CUUCAGCC CUGAUGAG X CGAA IACAUGCA			TGCATGTC C GGCTGAAG	
3611	CAGCCUUC CUGAUGAG X CGAA ICCGGACA			TGTCCGGC T GAAGGCTG	
3618	GGACACUC CUGAUGAG X CGAA ICCUUCAG			CTGAAGGC T GAGTGTCC	
3626	CCUCAGCC CUGAUGAG X CGAA IACACUCA			TGAGTGTC C GGCTGAGG	
3640	CAGGCCUC CUGAUGAG X CGAA ICCGGACA			TGTCCGGC T GAGGCCTG	
3646	CUCGCUCA CUGAUGAG X CGAA ICCUCAGC			GCTGAGGC C TGAGCGAG	
3647	ACUCGCUC CUGAUGAG X CGAA IGCCUCAG			CTGAGGCC T GAGCGAGT	
3649	CCUUGGCU CUGAUGAG X CGAA IACACUGG			CCAGTGTC C AGCCAAGG	
3650	CCCUUGGC CUGAUGAG X CGAA IGACACUC			GAGTGTCC A GCCAAGGG	
3653	CAGCCUUU CUGAUGAG X CGAA ICUGGACA			TGTCCAGC C AAGGGCTG	
3654	UCAGCCCU CUGAUGAG X CGAA IGCCUGGAC			GTCCAGCC A AGGGCTGA	
3660	GGACACUC CUGAUGAG X CGAA ICCCUUGG			CCAAGGGC T GAGTGTCC	
3668	GGGUGCU CUGAUGAG X CGAA IACACUCA			TGAGTGTC C AGCACACC	
3669	AGGUGUGC CUGAUGAG X CGAA IGACACUC			GAGTGTCC A GCACACCT	
3672	GGCAGGUG CUGAUGAG X CGAA ICUGGACA			TGTCCAGC A CACCTGCC	
3674	ACGGCAGG CUGAUGAG X CGAA IUGCUGGA			TCCAGCAC A CCTGCCGT	
3676	AGACGGCA CUGAUGAG X CGAA IUGUGCUG			CAGCACAC C TGCCGTCT	
3677	AAGACGGC CUGAUGAG X CGAA IGUGUGCU			AGCACACC T GCCGTCTT	
3680	GUGAAGAC CUGAUGAG X CGAA ICAGGUGU			ACACCTGC C GTCTTCAC	
3684	GGAAGUGA CUGAUGAG X CGAA IACGGCAG			CTGCCGTC T TCACTTCC	
3687	UGGGGAAG CUGAUGAG X CGAA IAAGACGG			CCGTCTTC A CTTCCCCA	
3689	UGUGGGGA CUGAUGAG X CGAA IUGAAGAC			GTCTTCAC T TCCCCACA	
3690	GCCUGUGG CUGAUGAG X CGAA IAAGUGAA			TTCACTTC C CCACAGGC	
3693	AGCCUGUG CUGAUGAG X CGAA IGAAGUGA			TCACTTCC C CACAGGCT	
3694	CAGCCUGU CUGAUGAG X CGAA IGGAAGUG			CACTTCCC C ACAGGCTG	
3695	CCAGCCUG CUGAUGAG X CGAA IGGGAAGU			ACTTCCCC A CAGGCTGG	
3697	CGCCAGCC CUGAUGAG X CGAA IUGGGGAA			TTCCCCAC A GGCTGGCG	
3701	CGAGCGCC CUGAUGAG X CGAA ICCUGUGG			CCACAGGC T GGCGCTGG	
3707	UGGAGCCG CUGAUGAG X CGAA ICGGCAGC			GCTGGCGC T GGCTCCA	
3712	UGGGGUGG CUGAUGAG X CGAA ICCGAGCG			CGCTCGGC T TCACCCCA	
3714	CCUGGGGU CUGAUGAG X CGAA IAGCCGAG			CTCGGCTC C ACCCCAGG	

3715	CCCUGGGG CUGAUGAG X CGAA IGAGCCGA		TCGGCTCC A CCCCAGGG	
3717	GGCCCUGG CUGAUGAG X CGAA IUGGAGCC		GGCTCCAC C CCAGGGCC	
3718	UGGCCCUG CUGAUGAG X CGAA IGUGGAGC		GCTCCACC C CAGGGCCA	
3719	CUGGCCCU CUGAUGAG X CGAA IGGUGGAG		CTCCACCC C AGGGCCAG	
3720	GCUGGCCC CUGAUGAG X CGAA IGGGUGGA		TCCACCCC A GGGCCAGC	
3725	GAAAAGCU CUGAUGAG X CGAA ICCCUGGG		CCCAGGGC C AGCTTTTC	
3728	GGAAAAGC CUGAUGAG X CGAA IGCCCUGG		CCAGGGCC A GCTTTTCC	
3729	UGAGGAAA CUGAUGAG X CGAA ICUGGCCC		GGGCCAGC T TTTCCTCA	
3734	CCUGGUGA CUGAUGAG X CGAA IAAAAGCU		AGCTTTTC C TCACCAGG	
3736	UCCUGGUG CUGAUGAG X CGAA IGAAAAGC		GCTTTTCC T CACCAGGA	
3737	GCUCCUGG CUGAUGAG X CGAA IAGGAAAA		TTTTCCTC A CCAGGAGC	
3739	GGGCUCCU CUGAUGAG X CGAA IUGAGGAA		TTCCTCAC C AGGAGCCC	
3740	CGGGCUCC CUGAUGAG X CGAA IGUGAGGA		TCCTCACC A GGAGCCCG	
3746	GGAAGCCG CUGAUGAG X CGAA ICUCCUGG		CCAGGAGC C CGGCTTCC	
3747	UGGAAGCC CUGAUGAG X CGAA IGCUCCUG		CAGGAGCC C GGCTTCCA	
3751	GGAGUGGA CUGAUGAG X CGAA ICCGGGCU		AGCCGGGC T TCCACTCC	
3754	UGGGGAGU CUGAUGAG X CGAA IAAGCCGG		CCGGCTTC C ACTCCCCA	
3755	GUGGGGAG CUGAUGAG X CGAA IGAAGCCG		CGGCTTCC A CTCCCCAC	
3757	AUGUGGGG CUGAUGAG X CGAA IUGGAAGC		GCTTCCAC T CCCCACAT	
3759	CUAUGUGG CUGAUGAG X CGAA IAGUGGAA		TTCCACTC C CCACATAG	
3760	CCUAUGUG CUGAUGAG X CGAA IGAGUGGA		TCCACTCC C CACATAGG	
3761	UCCUAUGU CUGAUGAG X CGAA IGGAGUGG		CCACTCCC C ACATAGGA	
3762	UUCCUAUG CUGAUGAG X CGAA IGGGAGUG		CACTCCCC A CATAGGAA	
3764	UAUUCCUA CUGAUGAG X CGAA IUGGGGAG		CTCCCCAC A TAGGAATA	
3776	CUGGGGAU CUGAUGAG X CGAA IACUAUUC		GAATAGTC C ATCCCCAG	
3777	UCUGGGGA CUGAUGAG X CGAA IGACUAUU		AATAGTCC A TCCCCAGA	
3780	GAAUCUGG CUGAUGAG X CGAA IAUGGACU		AGTCCATC C CCAGATTC	
3781	CGAAUCUG CUGAUGAG X CGAA IGAUGGAC		GTCCATCC C CAGATTCG	
3782	GCGAAUCU CUGAUGAG X CGAA IGGAUGGA		TCCATCCC C AGATTCGC	
3783	GGCGAAUC CUGAUGAG X CGAA IGGGAUGG		CCATCCCC A GATTCGCC	
3791	UGAACAAU CUGAUGAG X CGAA ICGAAUCU		AGATTCGC C ATTGTTCA	
3792	GUGAACAA CUGAUGAG X CGAA IGCGAAUC		GATTCGCC A TTGTTCAC	
3799	GCGAGGGG CUGAUGAG X CGAA IAACAAUG		CATTGTTC A CCCCTCGC	
3801	GGGCGAGG CUGAUGAG X CGAA IUGAACAA		TTGTTCAC C CCTCGCCC	
3802	AGGGCGAG CUGAUGAG X CGAA IGUGAACA		TGTTCACC C CTCGCCCT	
3803	CAGGGCGA CUGAUGAG X CGAA IGGUGAAC		GTTCACCC C TCGCCCTG	
3904	GCAGGGCG CUGAUGAG X CGAA IGGGUGAA		TTCACCCC T CGCCCTGC	
3808	GAGGGCAG CUGAUGAG X CGAA ICGAGGGG		CCCCTCGC C CTGCCCTC	
3809	GGAGGGCA CUGAUGAG X CGAA IGCGAGGG		CCCTCGCC C TGCCCTCC	
3810	AGGAGGGC CUGAUGAG X CGAA IGGCGAGG		CCTCGCCC T GCCCTCCT	
3813	CAAAGGAG CUGAUGAG X CGAA ICAGGGCG		CGCCCTGC C CTCCTTTG	
3814	GCAAAGGA CUGAUGAG X CGAA IGCAGGGC		GCCCTGCC C TCCTTTGC	
3815	GGCAAAGG CUGAUGAG X CGAA IGGCAGGG		CCCTGCCC T CCTTTGCC	
3817	AAGGCAAA CUGAUGAG X CGAA IAGGGCAG		CTGCCCTC C TTTGCCTT	
3818	GAAGGCAA CUGAUGAG X CGAA IGAGGGCA		TGCCCTCC T TTGCCTTC	
3823	GGGUGGAA CUGAUGAG X CGAA ICAAAGGA		TCCTTTGC C TTCCACCC	
3824	GGGGUGGA CUGAUGAG X CGAA IGCAAAGG		CCTTTGCC T TCCACCCC	

Table IV

3927	GUGGGGU CUGAUGAG X CGAA IAAGGCAA		TTGCCTTC C ACCCCCAC	
3928	GGUGGGG CUGAUGAG X CGAA IGAAGGCA		TGCCTTCC A CCCCCACC	
3930	AUGGUGGG CUGAUGAG X CGAA IUGGAAGG		CCTTCCAC C CCCACCAT	
3931	GAUGGUGG CUGAUGAG X CGAA IGUGGAAG		CTTCCACC C CCACCATC	
3932	GGAUGGUG CUGAUGAG X CGAA IGGUGGAA		TTCCACCC C CACCATCC	
3933	UGGAUGGU CUGAUGAG X CGAA IGGGUGGA		TCCACCCC C ACCATCCA	
3934	CUGGAUGG CUGAUGAG X CGAA IGGGGUGG		CCACCCCC A CCATCCAG	
3936	ACCUGGAU CUGAUGAG X CGAA IUGGGGGU		ACCCCCAT C ATCCAGGT	
3937	CACCUGGA CUGAUGAG X CGAA IGUGGGGG		CCCCCACC A TCCAGGTG	
3940	CUCCACCU CUGAUGAG X CGAA IAUGGUGG		CCACCATC C AGGTGGAG	
3941	UCUCCACC CUGAUGAG X CGAA IGAUGGUG		CACCATCC A GGTGGAGA	
3951	CUUCUCAG CUGAUGAG X CGAA IUCUCCAC		GTGGAGAC C CTGAGAAG	
3952	CCUUCUCA CUGAUGAG X CGAA IGUCUCCA		TGGAGACC C TGAGAAGG	
3953	UCCUUCUC CUGAUGAG X CGAA IGGUCUCC		GGAGACCC T GAGAAGGA	
3963	GCUCCCAG CUGAUGAG X CGAA IUCCUUCU		AGAAGGAC C CTGGGAGC	
3964	AGCUCCCA CUGAUGAG X CGAA IGUCCUUC		GAAGGACC C TGGGAGCT	
3965	GAGCUCCC CUGAUGAG X CGAA IGGUCCUU		AAGGACCC T GGGAGCTC	
3972	AUUCCCAG CUGAUGAG X CGAA ICUCCCAG		CTGGGAGC T CTGGGAAT	
3974	AAAUUCCC CUGAUGAG X CGAA IAGCUCCC		GGGAGCTC T GGGAATTT	
3991	ACACCUUU CUGAUGAG X CGAA IUCACUCC		GGAGTGAC C AAAGGTGT	
3992	CACACCUU CUGAUGAG X CGAA IGUCACUC		GAGTGACC A AAGGTGTG	
3900	GUGUACAG CUGAUGAG X CGAA ICACACCU		AGGTGTGC C CTGTACAC	
3903	UGUGUACA CUGAUGAG X CGAA IGCACACC		GGTGTGCC C TGTACACA	
3904	CUGUGUAC CUGAUGAG X CGAA IGGCACAC		GTGTGCCC T GTACACAG	
3909	CUCCCCUG CUGAUGAG X CGAA IUACAGGG		CCCTGTAC A CAGGCGAG	
3911	UCCUUGCC CUGAUGAG X CGAA IUGUACAG		CTGTACAC A GGCGAGGA	
3921	AGGUGCAG CUGAUGAG X CGAA IUCCUCCC		GCGAGGAC C CTGCACCT	
3922	CAGGUGCA CUGAUGAG X CGAA IGUCCUCG		CGAGGACC C TGCACCTG	
3923	CCAGGUGC CUGAUGAG X CGAA IGGUCCUC		GAGGACCC T GCACCTGG	
3926	CAUCCAGG CUGAUGAG X CGAA ICAGGGUC		GACCCTGC A CCTGGATG	
3928	CCCAUCCA CUGAUGAG X CGAA IUGGCAGG		CCCTGCAC C TGGATGGG	
3929	CCCCAUCC CUGAUGAG X CGAA IGUGCAGG		CCTGCACC T GGATGGGG	
3941	ACCCACAG CUGAUGAG X CGAA IACCCCCA		TGGGGGTC C CTGTGGGT	
3942	GACCCACA CUGAUGAG X CGAA IGACCCCC		GGGGGTCC C TGTGGGTC	
3943	UGACCCAC CUGAUGAG X CGAA IGGACCCC		GGGGTCCC T GTGGGTCA	
3951	CCCCAAUU CUGAUGAG X CGAA IACCCACA		TGTGGGTC A AATTGGGG	
3968	ACUCCCAC CUGAUGAG X CGAA ICACCUCC		GGAGGTGC T GTGGGAGT	
3984	AUAUAUUC CUGAUGAG X CGAA IUAUUUUA		TAAAATAC T GAATATAT	
4002	UUCAAAAC CUGAUGAG X CGAA IAAAAACU		AGTTTTTC A GTTTGAA	

Stem Length = 8 . Core Sequence = CUGAUGAG X CGAA (X = GCCGUUAGGC or other stem II
sequence and length (greater than or equal to 2 base-pairs)). I = Inosine nucleotide

Seq1 = TERT (Homo sapiens telomerase reverse transcriptase (TERT) mRNA, 4015 bp); Nakamura *et al.*, Science 277 (5328), 955-959 (1997)

Table V: Human telomerase reverse transcriptase (TERT) G-Cleaver Ribozyme and Target Sequence

nt. Position	Substrate Sequence	Seq ID Nos	Ribozyme Sequence	Seq ID Nos
16	GCUGCGGGCU G CUGCG		CGCAG UGAUGAUGCAUGCACUAUGCGCG AGGAGGCAGC	
19	GCGUCCUGCU G CGCAC		GUGCG UGAUGGCAUGCACUAUGCGCG AGCAGGACGC	
21	GUCCUGCUGC G CACGU		ACGCG UGAUGGCAUGCACUAUGCGCG GCAGCAGGAC	
53	GGCCACGCGC G CGAUG		CAUCG UGAUGGCAUGCACUAUGCGCG GGGGUGGCC	
55	CCACGCGCGC G AUGCC		GGCAU UGAUGGCAUGCACUAUGCGCG GCGGGGGUGG	
58	CCCGCGCGAU G CCGGG		CGGGG UGAUGGCAUGCACUAUGCGCG AUCGCGGGGG	
61	CCGCGAUGCC G GGGCC		GGCCC UGAUGGCAUGCACUAUGCGCG GGCAUCGCGG	
63	GCGAUGCCGG G GCGUC		GACGC UGAUGGCAUGCACUAUGCGCG GGGGCAUCGC	
65	GAUGCCGGGC G CGUCC		GGACG UGAUGGCAUGCACUAUGCGCG CGGGGCAUC	
72	GGCGUCCGGC G CGGCC		GGCCG UGAUGGCAUGCACUAUGCGCG GUGGGGCGG	
75	GUCCGGCGCG G CCGAG		CUCGG UGAUGGCAUGCACUAUGCGCG AGCGGGGCGG	
78	CCGGCGCGGC G AGUUG		CAACU UGAUGGCAUGCACUAUGCGCG AGCGGGGGG	
85	GCCGAGUUGU G CGCUC		GAGCG UGAUGGCAUGCACUAUGCGCG ACGGCUCGGC	
87	CGAGGCGUGC G CCUCC		GGGAG UGAUGGCAUGCACUAUGCGCG GCAUGGCUGG	
94	UGCGCCUCCU G CUGCG		CGCAG UGAUGGCAUGCACUAUGCGCG AGGAAGCGCA	
97	GCUCCCUGCU G CGCAG		CUGCG UGAUGGCAUGCACUAUGCGCG AGCAGGGAGC	
99	UCCCUGCUGC G CAGCC		GGCUG UGAUGGCAUGCACUAUGCGCG GCAGCAGGGA	
111	AGCCACUACC G CGAGG		CCUCG UGAUGGCAUGCACUAUGCGCG GGUAGUGGCU	
113	CCACUACCGC G AGGUG		CACCU UGAUGGCAUGCACUAUGCGCG GCGGUAGUGG	
118	ACCGCGAGGU G CUGCC		GGCAG UGAUGGCAUGCACUAUGCGCG ACCUCGCGGU	
121	GCGAGGUGCU G CCGCU		AGCGG UGAUGGCAUGCACUAUGCGCG AGCACCUCGC	
124	AGGUGCUGCC G CGGCU		GCCGC UGAUGGCAUGCACUAUGCGCG GGCAGCACCU	
139	CCANGUUCGU G CGGCG		CGCCG UGAUGGCAUGCACUAUGCGCG ACGAACGUCG	
144	UUCGUGCGGC G CCUGG		CCAGG UGAUGGCAUGCACUAUGCGCG GCCGCACGAA	
172	GCGGGGUGGU G CAGCG		CGCUG UGAUGGCAUGCACUAUGCGCG ACCACCCGCC	
177	CUGGUGCAGC G CGGCG		GCCGC UGAUGGCAUGCACUAUGCGCG GCUGCACCAG	
198	GCGGGCUUUC G CGGCG		GCCGC UGAUGGCAUGCACUAUGCGCG GCAAAGCCGC	
200	GGGCUUUCGC G GCGUG		CACGC UGAUGGCAUGCACUAUGCGCG GCGGAAAGCC	

202	CUUUCCCUCC G CUCCU			ACCAG	UGAUGGCAUGCACUAUGCGCG	GCGCGGAAAG
216	GUUGGCCAGU G CCUGG			CCAGU	UGAUGGCAUGCACUAUGCGCG	ACUGGGCCAC
223	AGUGCCUGGU G UGCCU			ACGCA	UGAUGGCAUGCACUAUGCGCG	ACCAGGCACU
225	UGCCUGGGU G CUGCC			GUACG	UGAUGGCAUGCACUAUGCGCG	ACACCAGGCA
229	UGGUGUGCCU G CCUGG			CAGGG	UGAUGGCAUGCACUAUGCGCG	ACGGCACCA
239	GCCCUGGGAC G CAGGG			CCGGG	UGAUGGCAUGCACUAUGCGCG	GUCCCAGGGC
247	ACGCAGGGCC G CCGGG			GGGGG	UGAUGGCAUGCACUAUGCGCG	GGCCGGGG
254	GCCGGGCCCC G CCGGC			GGCGG	UGAUGGCAUGCACUAUGCGCG	GGGGGGG
257	GCCCGGGGCC G CCCCC			GGGGG	UGAUGGCAUGCACUAUGCGCG	GGGCCGGGC
270	CCCUCCCUCC G CCAGG			CCUGG	UGAUGGCAUGCACUAUGCGCG	GGAAGGAGGG
277	UCGGCCAGGU G UCCUG			CAGGA	UGAUGGCAUGCACUAUGCGCG	ACUGGGUGA
282	CAGGUGUCCU G CCUGA			UCAGG	UGAUGGCAUGCACUAUGCGCG	AGGAUACCUG
286	UGUCCUGCCU G AAGGA			UCCUU	UGAUGGCAUGCACUAUGCGCG	AGGGCAGGACA
303	CUGGUGGCCU G AGGGU			GCAGU	UGAUGGCAUGCACUAUGCGCG	GGGUAUUAG
307	UGGGUGGAGU G CUGCA			UGCAG	UGAUGGCAUGCACUAUGCGCG	ACUUUGGCCA
310	CCCGAGUGCU G CAGAG			CUGCA	UGAUGGCAUGCACUAUGCGCG	ACUACUGGGG
319	UGCAGAGCU G UGCGA			UCGCA	UGAUGGCAUGCACUAUGCGCG	AGCUUCUGCA
321	CAGAAGCUGU G CGAGG			GCUCG	UGAUGGCAUGCACUAUGCGCG	ACAGCCUUG
323	GAGGCUGUGC G AGCGC			GCGCU	UGAUGGCAUGCACUAUGCGCG	GUACAGCCUC
327	CUGUGCGAGC G AGCGG			CGGCG	UGAUGGCAUGCACUAUGCGCG	GUUGGACAG
332	CGAGCGGGCG G CGAAG			CUUCG	UGAUGGCAUGCACUAUGCGCG	GCCGCGGCUG
334	AGCGGGCGGC G AAGAA			UUCUU	UGAUGGCAUGCACUAUGCGCG	GCGGCGGCUC
343	CGAAGAACGU G CUGGG			GCCAG	UGAUGGCAUGCACUAUGCGCG	ACGGCGGAAG
359	CUUCGGCUUC G CGCUG			CAGCG	UGAUGGCAUGCACUAUGCGCG	GAAGCGGAAG
361	UCGGCUUCGC G CUGGU			AGCAG	UGAUGGCAUGCACUAUGCGCG	GCUGAAGGGA
364	GCUUCGCGCU G CUGGA			UCCAG	UGAUGGCAUGCACUAUGCGCG	AGGCGGAAGC
378	GACGGGGCUG G CGGGG			CCGGG	UGAUGGCAUGCACUAUGCGCG	GGGCCCGGUC
392	GGGGCGGGCG G CGGGG			GGCCG	UGAUGGCAUGCACUAUGCGCG	GGGGCCCGC
412	CCAGGCCCCU G CGCAG			AGCCU	UGAUGGCAUGCACUAUGCGCG	ACGGUGGGG
414	ACCAGGCGGC G CAGCU			AGCUG	UGAUGGCAUGCACUAUGCGCG	GUAGCUGGU
424	GCAGCUACCU G CCCAA			UUGGG	UGAUGGCAUGCACUAUGCGCG	AGUUAGCUGC

436	CCAACACGGU	G	ACCGA	UCGGU UGAUGGCAUGCACUAUGCGCG ACCGUGUUGG
440	CACGGCGAC	G	ACUGA	UGCGU UGAUGGCAUGCACUAUGCGCG GGUCACCGUG
443	GGUGACCGAC	G	CACUG	CAGUG UGAUGGCAUGCACUAUGCGCG GGUCACCGUG
448	CCGACGCACU	G	CGGGG	CCGGG UGAUGGCAUGCACUAUGCGCG AGUGCGUCGG
472	CGUGGGGGCU	G	CUGCU	AGCAG UGAUGGCAUGCACUAUGCGCG AGCCCCACG
475	GGGGGCUGCU	G	CUGCG	CGCAG UGAUGGCAUGCACUAUGCGCG AGCAGCCCC
478	GGCUGCUGCU	G	CGCCG	CGGCG UGAUGGCAUGCACUAUGCGCG AGCAGCAGCC
480	CUGCUGCUGC	G	CCGGC	CGGCG UGAUGGCAUGCACUAUGCGCG GCAGCAGCAG
483	CUGCUGCGCC	G	CGGGG	CCGCG UGAUGGCAUGCACUAUGCGCG GGCGCAGCAG
491	CCGCGUGGGC	G	ACGAC	GUCGU UGAUGGCAUGCACUAUGCGCG GCCCACGCGG
494	CGUGGGCGAC	G	ACGUG	CACGU UGAUGGCAUGCACUAUGCGCG GUCGCCCACG
499	GCGACGACGU	G	CUGGU	ACCAG UGAUGGCAUGCACUAUGCGCG ACGUCGUCGC
511	UGGUUCACCU	G	CUGCU	GGCAG UGAUGGCAUGCACUAUGCGCG AGGUGAACCA
519	CUGCUGGCAC	G	CUGCG	CGCAG UGAUGGCAUGCACUAUGCGCG GUGCCAGCAG
522	CUGGCACGGU	G	CGGGC	GCCCG UGAUGGCAUGCACUAUGCGCG AGCCGUGCAG
524	GGCACGGCUGC	G	CGCGC	GAGCG UGAUGGCAUGCACUAUGCGCG GCCAGCGUGCC
526	CACGGCUGGC	G	CGCUU	AAGCG UGAUGGCAUGCACUAUGCGCG GCCAGCCGUG
533	CGGGCUCUU	G	CUGGU	CAGCA UGAUGGCAUGCACUAUGCGCG AAAGAGCGUG
535	CGCUCUUUGU	G	CUGGU	ACCAG UGAUGGCAUGCACUAUGCGCG ACAAAGAGCG
552	GCUUUCAGUU	G	CUCCU	AGGCG UGAUGGCAUGCACUAUGCGCG GCAACUGGAA
554	UCCCAGCUGC	G	UGUUG	GUACG UGAUGGCAUGCACUAUGCGCG GCAACUGGGA
565	CCUACCAGGU	G	UGGGC	GCCCG UGAUGGCAUGCACUAUGCGCG ACCUGGUAGG
567	UACCAGGUGU	G	CGGGC	GCCCG UGAUGGCAUGCACUAUGCGCG ACACCUGGUA
574	UGUGCGGGCU	G	CCGGU	AGCCG UGAUGGCAUGCACUAUGCGCG GGCCCGCACA
577	GGGGGCCGGC	G	CGGUA	UACCG UGAUGGCAUGCACUAUGCGCG GGCGCCCGGC
580	GGCCGGCCGU	G	UACCA	UGGUA UGAUGGCAUGCACUAUGCGCG AGCGGCGGCC
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593	CCAGCUGGGC	G	CUGCC	GGCAG UGAUGGCAUGCACUAUGCGCG GCCCGCAGUUGG
596	GCUCGGGGCU	G	CCAUU	AGUGG UGAUGGCAUGCACUAUGCGCG AGCGCCGAGC
616	CCGGGCCCC	G	CCACA	UGUGG UGAUGGCAUGCACUAUGCGCG GGGCGCGGGG
623	CCGGCCCAC	G	CUAGU	ACUAG UGAUGGCAUGCACUAUGCGCG GUGCGGGGGG
636	AGUGGACCCC	G	AAGGC	GCCUU UGAUGGCAUGCACUAUGCGCG GGGGUCCACU

651	CGUCUGGGAU	G	CGAAC	GUUCG	UGAUGGCAUGCACUAUGCGCG AUCCCAGACG
653	UCUGGGAUGC	G	AACGG	CCGUU	UGAUGGCAUGCACUAUGCGCG GCAUCCAGA
703	GCCGGGAUCU	G	CCAGC	GCUGG	UGAUGGCAUGCACUAUGCGCG AGGCCCAGGG
716	AGCCCGGGU	G	UGAGG	CUUUC	UGAUGGCAUGCACUAUGCGCG ACCCCGGGCU
718	CCCGGGGUGC	G	AGGAG	CUCCU	UGAUGGCAUGCACUAUGCGCG GCACCCGGGC
726	GCGAGGAGCC	G	CGAGG	CCUCG	UGAUGGCAUGCACUAUGCGCG GCCUCUCGGC
737	CGGGGGCAGU	G	CGAGC	GCUCG	UGAUGGCAUGCACUAUGCGCG ACUGCCCCCG
744	AGUGCCAGCC	G	AAGUC	GACUU	UGAUGGCAUGCACUAUGCGCG GGCUGGCACU
751	GCCGAAGUCU	G	CCGUU	AACGG	UGAUGGCAUGCACUAUGCGCG AGACUUCGGC
757	GUCUGCCGUU	G	CCCAA	UUGGG	UGAUGGCAUGCACUAUGCGCG AACGGCAGAC
779	CAGGCGUGGC	G	CUGCC	GGCAG	UGAUGGCAUGCACUAUGCGCG GCCACGCCUG
782	GCGUGGCCU	G	CCCU	AGGGG	UGAUGGCAUGCACUAUGCGCG AGCGCCACGC
788	CGCUGCCCU	G	AGCCG	CGGCU	UGAUGGCAUGCACUAUGCGCG AGGGGCAGGG
802	CGGAGCGGAC	G	CCCGU	ACGGG	UGAUGGCAUGCACUAUGCGCG GUCCGCUCCG
841	CGGGCAGGAU	G	CGCAG	CUGCG	UGAUGGCAUGCACUAUGCGCG GCCCUGCCCG
866	CGGGGGAU	G	AGUGA	UCAUU	UGAUGGCAUGCACUAUGCGCG GUCCCAGCCG
854	UGGACCGAGU	G	ACGGU	ACGGU	UGAUGGCAUGCACUAUGCGCG ACUCGGUCCA
867	CGUGGGUUCU	G	UCAUGG	CUACA	UGAUGGCAUGCACUAUGCGCG AGAAACCACG
869	UGGGUUCUUU	G	UCAUG	CAUCA	UGAUGGCAUGCACUAUGCGCG ACAGAAACCA
874	UCUGUGUGGU	G	UCACC	GGUGA	UGAUGGCAUGCACUAUGCGCG ACCACACAGA
881	GGGUGCACUU	G	CCAGA	UCUGG	UGAUGGCAUGCACUAUGCGCG AGGUGCACCC
890	UGCCAGACCC	G	CCGAA	UUCGG	UGAUGGCAUGCACUAUGCGCG GGGUCUGGCA
893	CAGGACCCGC	G	AAGAA	UUCUU	UGAUGGCAUGCACUAUGCGCG GGCGGGUCUG
917	UUUGGAGGGU	G	GGCUC	GAGCC	UGAUGGCAUGCACUAUGCGCG ACCCUCCAAA
919	UGGAGGGUGG	G	CUUC	GAAGC	UGAUGGCAUGCACUAUGCGCG GCACCCUCCA
931	UCUUCUGGCAC	G	CGCCA	UGGCG	UGAUGGCAUGCACUAUGCGCG GUGCCAGAGA
933	UCUGGCACGC	G	UCACU	AGUGG	UGAUGGCAUGCACUAUGCGCG GUGCCAGAGA
957	UCCGUGGGC	G	CCAGG	GCCUG	UGAUGGCAUGCACUAUGCGCG GGCCCAGGGA
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988	CAUCCACAUC	G	CGGC	GGCCG	UGAUGGCAUGCACUAUGCGCG CAUCCAGGAUG
1012	CCUGGGACAC	G	CUUUG	CAAGG	UGAUGGCAUGCACUAUGCGCG GUGUCCCAGG

1017	GACACGCCCU	G	UCCCC	GGGGA UGAUGGCAUGCACUAUGCGCG AAGGCGUGUC
1027	GUCCCCGGU	G	UACGC	GCGUA UGAUGGCAUGCACUAUGCGCG ACCGGGGAC
1031	CCCGGUGUAC	G	CCGAG	CUCGG UGAUGGCAUGCACUAUGCGCG GUACACGGG
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1117	GGCCCAGCCU	G	ACUGG	CCAGU UGAUGGCAUGCACUAUGCGCG AGGCUGGGCC
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1171	GGCCCUGGAU	G	CCAGG	CCUGG UGAUGGCAUGCACUAUGCGCG AUCCAGGGCC
1185	GGGACUCCCC	G	CAGGU	ACCUG UGAUGGCAUGCACUAUGCGCG GGGGAGUCCC
1192	CCCGCAGGU	G	CCCCG	CGGGG UGAUGGCAUGCACUAUGCGCG AACCUGCGGG
1197	AGGUUGCCCC	G	CCUGC	GCAGG UGAUGGCAUGCACUAUGCGCG GGGGCAACCU
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1209	CUGCCCCAGC	G	CUACU	AGUAG UGAUGGCAUGCACUAUGCGCG GCUGGGGCAG
1222	ACUGGCAAAU	G	CGGCC	GGCCG UGAUGGCAUGCACUAUGCGCG AUUUGCCAGU
1231	UGCGGCCCCU	G	UUUCU	AGAAA UGAUGGCAUGCACUAUGCGCG AGGGGCCGCA
1243	UUCUGGAGCU	G	CUUGG	CCAAG UGAUGGCAUGCACUAUGCGCG AGCUCCAGAA
1256	UGGGAACCAC	G	CGCAG	CUGCG UGAUGGCAUGCACUAUGCGCG GUGGUUCCCA
1258	GGAACCACGC	G	CAGUG	CACUG UGAUGGCAUGCACUAUGCGCG GCGUGGUUCC
1263	CACGCGCAGU	G	CCCCU	AGGGG UGAUGGCAUGCACUAUGCGCG ACUGCGCGUG
1276	CCUACGGGGU	G	CUCCU	AGGAG UGAUGGCAUGCACUAUGCGCG ACCCCGUAGG
1288	UCCUCAAGAC	G	CACUG	CAGUG UGAUGGCAUGCACUAUGCGCG GUCUGAGGA
1293	AAGACGCACU	G	CCCGC	GCGGG UGAUGGCAUGCACUAUGCGCG AGUGCGUCUU
1297	CGCACUGCCC	G	CUGCG	CGCAG UGAUGGCAUGCACUAUGCGCG GGGCAGUGCG
1300	ACUGCCCGCU	G	CGAGC	GCUCG UGAUGGCAUGCACUAUGCGCG AGGGGGCAGU
1302	UGCCCGCUGC	G	AGCUG	CAGCU UGAUGGCAUGCACUAUGCGCG GCAGCGGGCA
1307	GCUGCGAGCU	G	CGGUC	GACCG UGAUGGCAUGCACUAUGCGCG AGCUCGCAGC
1328	AGCAGCCGGU	G	UCUGU	ACAGA UGAUGGCAUGCACUAUGCGCG ACGGGCUGCU
1332	GCCGGUGUCU	G	UGCCC	GGGCA UGAUGGCAUGCACUAUGCGCG AGACACCGGC
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1358	CCAGGGCUCU	G	UGGCG		CGCCA UGAUGGCAUGCACUAUGCGCG AGAGCCCUGG
1370	GGCGGCCCCC	G	AGGAG		CUCCU UGAUGGCAUGCACUAUGCGCG GGGGGCCGCC
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1607	GCGGGACUGC	G	CUUGG		CCAAG UGAUGGCAUGCACUAUGCGCG GCAGUCCCGC
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1638	GGGGUUGGCU	G	UGUUC		GAACA UGAUGGCAUGCACUAUGCGCG AGCCAACCC
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1667	CCGUCUGCGU	G	AGGAG		CUCCU UGAUGGCAUGCACUAUGCGCG ACGCAGACGG
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1699	UGCACUGGCU	G	AUGAG		CUCAU UGAUGGCAUGCACUAUGCGCG AGCCAGUGCA
1702	ACUGGCUGAU	G	AGUGU		ACACU UGAUGGCAUGCACUAUGCGCG AUCAGCCAGU
1706	GCUGAUGAGU	G	UGUAC		GUACA UGAUGGCAUGCACUAUGCGCG ACUCAUCAGC
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1849	GGGUGCAGCU	G	GGGA		UCCCG UGAUGGCAUGCACUAUGCGCG ACCCUCUCA
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1920	UCCAGACUCC	G	CUUCA		UGAAG UGAUGGCAUGCACUAUGCGCG GGAGUCUGGA
1937	CCCAAGCU	G	ACGGG		CCCGU UGAUGGCAUGCACUAUGCGCG AGGCUUGGGG
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1951	GGCUGCGGGC	G	AUUGU		ACAAU UGAUGGCAUGCACUAUGCGCG GGCGGCAGCC
1955	GCGGCCGAUU	G	UGAAC		GUUCA UGAUGGCAUGCACUAUGCGCG AAUCGGCCGC
1957	GGCCGAUUGU	G	AACAU		AUGUU UGAUGGCAUGCACUAUGCGCG ACAAUCGGCC
1992	AGAACGUUCC	G	CAGAG		CUCUG UGAUGGCAUGCACUAUGCGCG GGAACGUUCU
2009	AAAGAGGGCC	G	AGGCU		ACGCU UGAUGGCAUGCACUAUGCGCG GGCCCUCUUU
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2029	CCUCGAGGGU	G	AAGGC		GCCUU UGAUGGCAUGCACUAUGCGCG ACCCUCGAGG
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2087	CCUCCUGGGC	G	CCUCU	AGAGG	UGAUGGCAUGCAUGCACUAUGCGCG	GCCCAGGAGG
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2201	UGUGACGGGC	G	CGUAC	GUACG	UGAUGGCAUGCAUGCACUAUGCGCG	GCCCGUCACA
2207	GGGCGCGUAC	G	ACACC	GGUGU	UGAUGGCAUGCAUGCACUAUGCGCG	GUACGCGCC
2243	GGAGGCAUC	G	CGAG	GUAGG	UGAUGGCAUGCAUGCACUAUGCGCG	CAUGACCUCC
2274	AACACGUACU	G	CGUGC	GCACG	UGAUGGCAUGCAUGCACUAUGCGCG	AGUACGUGU
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2288	GCGUCGGUAU	G	CCGUG	CACGG	UGAUGGCAUGCAUGCACUAUGCGCG	AUACCGACGC
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2376	CCGUACAUGC	G	ACAGU	ACUGU	UGAUGGCAUGCAUGCACUAUGCGCG	GCAUGUACGG
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2413	CCAGCCCGCU	G	AGGGA	UCCCU	UGAUGGCAUGCAUGCACUAUGCGCG	AGCGGGCUGG
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2453	CUCCCUGAAU G AGGCC		GGCCU UGAUGGCAUGCAUGCACUAUGCGCG AUUCAGGGAG
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2487	GUCUCCUAC G CUUCA		UGAAG UGAUGGCAUGCAUGCACUAUGCGCG GUAGGAAGAC
2494	UACGCUUCAU G UGCCA		UGGCA UGAUGGCAUGCAUGCACUAUGCGCG AUGAAGCGUA
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2504	GUGCCACCAC G CCGUG		CACGG UGAUGGCAUGCAUGCACUAUGCGCG GUGGUGGCAC
2509	ACCACGCCGU G CGCAU		AUGCG UGAUGGCAUGCAUGCACUAUGCGCG ACGGCGUGGU
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2538	UACGUCCAGU G CCAGG		CCUGG UGAUGGCAUGCAUGCACUAUGCGCG ACUGGACGUA
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2572	UCUUCUCCAC G CUGCU		AGCAG UGAUGGCAUGCAUGCACUAUGCGCG GUGGAGAGGA
2575	UCUCCACGCU G CUCUG		CAGAG UGAUGGCAUGCAUGCACUAUGCGCG AGCGUGGAGA
2580	ACGCUGCUCU G CAGCC		GGCUG UGAUGGCAUGCAUGCACUAUGCGCG AGAGCAGCGU
2587	UCUGCAGCCU G UGCUA		UAGCA UGAUGGCAUGCAUGCACUAUGCGCG AGGCUGCAGA
2589	UGCAGCCUGU G CUACG		CGUAG UGAUGGCAUGCAUGCACUAUGCGCG ACAGGCUGCA
2597	GUGCUACGGC G ACAUG		CAUGU UGAUGGCAUGCAUGCACUAUGCGCG GCCGUAGCAC
2614	AGAACAAGCU G CGGGG		CCCCG UGAUGGCAUGCAUGCACUAUGCGCG AGCUUGUUCU
2618	CAAGCUGUUU G CGGGG		CCCCG UGAUGGCAUGCAUGCACUAUGCGCG AAACAGCUUG
2641	GGGACGGGCU G CUCCU		AGGAG UGAUGGCAUGCAUGCACUAUGCGCG AGCCCGUCCC
2647	GGCUGCUCCU G CGUUU		AAACG UGAUGGCAUGCAUGCACUAUGCGCG AGGAGCAGCC
2660	UUUGGUGGAU G AUUUC		GAAAU UGAUGGCAUGCAUGCACUAUGCGCG AUCCACCAAA
2668	AUGAUUUCUU G UUGGU		ACCAA UGAUGGCAUGCAUGCACUAUGCGCG AAGAAAUCAU
2674	UCUUGUUGGU G ACACC		GGUGU UGAUGGCAUGCAUGCACUAUGCGCG ACCAACAAGA
2693	CCUCACCCAC G CGAAA		UUUCG UGAUGGCAUGCAUGCACUAUGCGCG GUGGGUGAGG
2695	UCACCCACGC G AAAAC		GUUUU UGAUGGCAUGCAUGCACUAUGCGCG GCGUGGGUGA
2721	ACCCUGGUCC G AGGUG		CACCU UGAUGGCAUGCAUGCACUAUGCGCG GGACCAGGGU
2726	GGUCCGAGGU G UCCCU		AGGGA UGAUGGCAUGCAUGCACUAUGCGCG ACUUCGGACC
2732	AGGUGUCCCU G AGUAU		AUACU UGAUGGCAUGCAUGCACUAUGCGCG AGGGACACCU
2742	GAGUAUGGCU G CGUGG		CCACG UGAUGGCAUGCAUGCACUAUGCGCG AGCCAUACUC

Pos	Seq					
2749	GCUGCGUGGU	G	AACUU		AAGUU UGAUGGCAUGCACUAUGCGCG ACCACGCAGC	
2755	UGGUGAACUU	G	CGGAA		UUCCG UGAUGGCAUGCACUAUGCGCG AAGUUCACCA	
2770	AGACAGUGGU	G	AACUU		AAGUU UGAUGGCAUGCACUAUGCGCG ACCACUGUCU	
2780	GAACUCCCU	G	UAGAA		UUCUA UGAUGGCAUGCACUAUGCGCG AGGGAAGUUC	
2789	UGUAGAAGAC	G	AGGCC		GGCCU UGAUGGCAUGCACUAUGCGCG GUCUCUACA	
2813	CACGGCUUU	G	UUCAG		CUGAA UGAUGGCAUGCACUAUGCGCG AAAAGCCGUG	
2821	UGUUCAGAU	G	CCCGC		GCCGG UGAUGGCAUGCACUAUGCGCG AUCUGAACAA	
2847	UUCCCCUGGU	G	CGGCC		GGCCG UGAUGGCAUGCACUAUGCGCG ACCAGGGGAA	
2854	GGUGCGGCCU	G	CUGCU		AGCAG UGAUGGCAUGCACUAUGCGCG AGGCCGCACC	
2857	GCGGCCUGCU	G	CUGGA		UCCAG UGAUGGCAUGCACUAUGCGCG AGCAGGCCGC	
2881	CCCUGGAGGU	G	CAGAG		CUCUG UGAUGGCAUGCACUAUGCGCG ACCUCCAGGG	
2888	GGUGCAGAGC	G	ACUAC		GUAGU UGAUGGCAUGCACUAUGCGCG GCUCUGCACC	
2903	CUCCAGCUAU	G	CCCGG		CCGGG UGAUGGCAUGCACUAUGCGCG AUAGCUGGAG	
2940	ACCUUCAACC	G	CGGCU		AGCCG UGAUGGCAUGCACUAUGCGCG GGUUGAAGGU	
2965	GGAGGAACAU	G	CGUCG		CGACG UGAUGGCAUGCACUAUGCGCG AUGUUCCUCC	
2970	AACAUGCGUC	G	CAAAC		GUUUG UGAUGGCAUGCACUAUGCGCG GACGCAUGUU	
2989	UUGGGGUCU	G	CGGCU		AGCCG UGAUGGCAUGCACUAUGCGCG AAGACCCAA	
2995	UCUUGCGGCU	G	AAGUG		CACUU UGAUGGCAUGCACUAUGCGCG AGCGGCAAGA	
3000	CGGCUGAAGU	G	UCACA		UGUGA UGAUGGCAUGCACUAUGCGCG ACUUCAGCCG	
3010	GUCACAGCCU	G	UUUCU		AGAAA UGAUGGCAUGCACUAUGCGCG AGGCUGUGAC	
3022	UUCUGGAUUU	G	CAGGU		ACCUG UGAUGGCAUGCACUAUGCGCG AAAUCCAGAA	
3028	AUUUGCAGGU	G	AACAG		CUGUU UGAUGGCAUGCACUAUGCGCG ACCUGCAAAU	
3046	UCCAGACGGU	G	UGCAC		GUGCA UGAUGGCAUGCACUAUGCGCG ACGGUCUGGA	
3048	CAGACGGUGU	G	CACCA		UGGUG UGAUGGCAUGCACUAUGCGCG ACACCGUCUG	
3073	AGAUCCUCCU	G	CUGCA		UGCAG UGAUGGCAUGCACUAUGCGCG AGGAGGAUCU	
3076	UCCUCCUGCU	G	CAGGC		GCCUG UGAUGGCAUGCACUAUGCGCG AGCAGGAGGA	
3095	CAGGUUUCAC	G	CAUGU		ACAUG UGAUGGCAUGCACUAUGCGCG GUGAAACCUG	
3099	UUUUCACGCAU	G	UGUGC		GCACA UGAUGGCAUGCACUAUGCGCG AUGCGUGAAA	
3101	UCACGCAUGU	G	UGCUG		CAGCA UGAUGGCAUGCACUAUGCGCG ACAUGCGUGA	
3103	ACGCAUGUGU	G	CUGCA		UGCAG UGAUGGCAUGCACUAUGCGCG ACACAUGCGU	
3106	CAUGUGUGCU	G	CAGCU		AGCUG UGAUGGCAUGCACUAUGCACUAUGCGCG AGCACACAUG	

3154	CAUUUUCCU	G	CGCGU	ACGCG UGAUGGCAUGCACUAUGCGCG	AGGAAAAUG
3156	UUUUUCCUGCU	G	CGUCA	UGACC UGAUGGCAUGCACUAUGCGCG	GCAGGAAAAA
3167	CGUCAUCUCU	G	ACACG	CGUGU UGAUGGCAUGCACUAUGCGCG	AGAGAUGACG
3183	GCCUCCUCU	G	CUACU	AGUAG UGAUGGCAUGCACUAUGCGCG	AGAGGAGGC
3196	ACUCCAUCCU	G	AAAGC	GCUUU UGAUGGCAUGCACUAUGCGCG	AGGAUGGAGU
3209	AGCCAAGAAC	G	CAGGG	CCCUG UGAUGGCAUGCACUAUGCGCG	GUUCUUGGCU
3217	ACGCAGGGAU	G	UCGCU	AGCGA UGAUGGCAUGCACUAUGCGCG	AUCCUGCGU
3220	CAGGGAUGUC	G	CUGG	CCCAG UGAUGGCAUGCACUAUGCGCG	GACAUCCUG
3236	GGCCAAGGGC	G	CUGC	GGCGG UGAUGGCAUGCACUAUGCGCG	GCCUUUGGCC
3239	CAAGGGCGCC	G	CCGGC	GCCGG UGAUGGCAUGCACUAUGCGCG	GGCGCCCUUG
3250	CCGGCCUCU	G	CCCUC	GAGGG UGAUGGCAUGCACUAUGCGCG	AGAGGGCGAGA
3257	UCUGCCCUCC	G	AGGCC	GGCCU UGAUGGCAUGCACUAUGCGCG	GGAGGGCAGA
3265	CCGAGGCCGU	G	CAGUG	CACUG UGAUGGCAUGCACUAUGCGCG	ACGGCCUCGG
3274	UGCAGUGGCU	G	UGCCA	UGGCA UGAUGGCAUGCACUAUGCGCG	AGCCACUGCA
3276	CAGUGGCUGU	G	CCACC	GGUGG UGAUGGCAUGCACUAUGCGCG	ACAGCCACUG
3292	AAGCAUUCCU	G	CUCAA	UUGAG UGAUGGCAUGCACUAUGCGCG	AGGAAUGCUU
3301	UGCUCAAGCU	G	ACUCG	CGAGU UGAUGGCAUGCACUAUGCGCG	AGCUUGAGCA
3306	AAGCUGACUC	G	ACACC	GGUGU UGAUGGCAUGCACUAUGCGCG	GAGCUCAGCUU
3314	UCGACACCGU	G	UCACC	GGUGA UGAUGGCAUGCACUAUGCGCG	ACGGUCGUCGA
3325	UCACCUACGU	G	CCACU	AGUGG UGAUGGCAUGCACUAUGCGCG	ACGUAGGUGA
3359	CAGCCCAGAC	G	CAGCU	AGCUG UGAUGGCAUGCACUAUGCGCG	GUCUGGGCUG
3364	AGAGGCAGCU	G	AGUCG	CGACU UGAUGGCAUGCACUAUGCGCG	AGCUGGGUCU
3385	UCCCGGGGAC	G	ACGGU	AGCGU UGAUGGCAUGCACUAUGCGCG	GUCCCCGGGA
3388	CGGGGACGAC	G	CUGAC	GUCAG UGAUGGCAUGCACUAUGCGCG	GUCGUCCCG
3391	GGACGACGCU	G	ACUGC	GCAGU UGAUGGCAUGCACUAUGCGCG	AGCCGUCGUC
3395	GACGCUGACU	G	CCUG	CAGGG UGAUGGCAUGCACUAUGCGCG	AGUCAGCGUC
3407	CCUGGAGGCU	G	CAGC	GGCUG UGAUGGCAUGCACUAUGCGCG	GGCCUCCAGG
3424	ACCCGGCACU	G	CCCUC	GAGGG UGAUGGCAUGCACUAUGCGCG	AGUCCGGGU
3453	AUCCUGGACU	G	AUGGC	GCCAU UGAUGGCAUGCACUAUGCGCG	AGUCCAGGAU
3464	AUGGCCACCU	G	CCCAC	GUGGG UGAUGGCAUGCACUAUGCGCG	GGGUGGCCAU
3479	CAGCCAGGCC	G	AGAGC	GCUCU UGAUGGCAUGCACUAUGCGCG	GGCUGGCUG

3501	CAGCAGCCCU G UCACG	CGUGA UGAUGGCAUGCAUGCACUAUGCGCG AGGGCUGCUG
3506	GCCCUGUCAC G CCGGG	CCCGG UGAUGGCAUGCAUGCACUAUGCGCG GUGACAGGGC
3554	ACCCAGGCCC G CACCG	CGGUG UGAUGGCAUGCAUGCACUAUGCGCG GGGCCUGGGU
3559	GGCCCGCACC G CUGGG	CCCAG UGAUGGCAUGCAUGCACUAUGCGCG GGUGCGGGCC
3570	CUGGGAGUCU G AGGCC	GGCCU UGAUGGCAUGCAUGCACUAUGCGCG AGACUCCCAG
3577	UCUGAGGCCU G AGUGA	UCACU UGAUGGCAUGCAUGCACUAUGCGCG AGGCCUCAGA
3581	AGGCCUGAGU G AGUGU	ACACU UGAUGGCAUGCAUGCACUAUGCGCG ACUCAGGCCU
3585	CUGAGUGAGU G UUUGG	CCAAA UGAUGGCAUGCAUGCACUAUGCGCG ACUCACUCAG
3593	GUGUUUGGCC G AGGCC	GGCCU UGAUGGCAUGCAUGCACUAUGCGCG GGCCAAACAC
3600	GCCGAGGCCU G CAUGU	ACAUG UGAUGGCAUGCAUGCACUAUGCGCG AGGCCUCGGC
3604	AGGCCUGCAU G UCCGG	CCGGA UGAUGGCAUGCAUGCACUAUGCGCG AUGCAGGCCU
3612	AUGUCCGGCU G AAGGC	GCCUU UGAUGGCAUGCAUGCACUAUGCGCG AGCCGGACAU
3619	GCUGAAGGCU G AGUGU	ACACU UGAUGGCAUGCAUGCACUAUGCGCG AGCCUUCAGC
3623	AAGGCUGAGU G UCCGG	CCGGA UGAUGGCAUGCAUGCACUAUGCGCG ACUCAGCCCU
3631	GUGUCCGGCU G AGGCC	GGCCU UGAUGGCAUGCAUGCACUAUGCGCG AGCCGGACAC
3638	GCUGAGGCCU G AGCGA	UCGCU UGAUGGCAUGCAUGCACUAUGCGCG AGGCCUCAGC
3642	AGGCCUGAGC G AGUGU	ACACU UGAUGGCAUGCAUGCACUAUGCGCG GCUCAGGCCU
3646	CUGAGCGAGU G UCCAG	CUGGA UGAUGGCAUGCAUGCACUAUGCGCG ACUCAGGCCU
3661	GCCAAGGGCU G AGUGU	ACACU UGAUGGCAUGCAUGCACUAUGCGCG AGCCCUGGC
3665	AGGGCUGAGU G UCCAG	CUGGA UGAUGGCAUGCAUGCACUAUGCGCG ACUCAGCCCU
3678	CAGCACACCU G CCGUC	GACGG UGAUGGCAUGCAUGCACUAUGCGCG AGGGUGCUG
3705	ACAGGCUGGC G CUCGG	CCGAG UGAUGGCAUGCAUGCACUAUGCGCG GCCAGCCUGU
3789	CCCCAGAUUC G CCAUU	AAUGG UGAUGGCAUGCAUGCACUAUGCGCG GAAUCUGGGG
3795	AUUCGCCAUU G UUCAC	GUGAA UGAUGGCAUGCAUGCACUAUGCGCG AAUGGCGAAU
3806	UUCACCCCUC G CCCUG	CAGGG UGAUGGCAUGCAUGCACUAUGCGCG GAGGGGUGAA
3811	CCCUCGCCCU G CCCUC	GAGGG UGAUGGCAUGCAUGCACUAUGCGCG AGGGCGAGGG
3821	GCCCUCCUUU G CCUUC	GAAGG UGAUGGCAUGCAUGCACUAUGCGCG AAAGGAGGGC
3854	UGGAGACCCU G AGAAG	CUUCU UGAUGGCAUGCAUGCACUAUGCGCG AGGGUCUCCA
3888	AAUUGGGAGU G ACCAA	UGGU UGAUGGCAUGCAUGCACUAUGCGCG ACUCCAAAUU
3898	GACCAAAGGU G UGCCC	GGGCA UGAUGGCAUGCAUGCACUAUGCGCG ACCUUUGGUC
3900	CCAAAGGUGU G CCCUG	CAGGG UGAUGGCAUGCACUACUAUGCGGCG ACACCUUUGG

3905	GGUGUGCCCU G UACAC	GUGUA UGAUGGCAUGCACUAUGCGCG AGGGCACACC	
3915	GUACACAGGC G AGGAC	GUCCU UGAUGGCAUGCACUAUGCGCG GCCUGUGUAC	
3924	CGAGGACCCU G CACCU	AGGUG UGAUGGCAUGCACUAUGCGCG AGGGUCCUCG	
3944	GGGGUCCCU G UGGGU	ACCCA UGAUGGCAUGCACUAUGCGCG AGGGACCCCC	
3966	GGGGGGAGGU G CUGUG	CACAG UGAUGGCAUGCACUAUGCGCG ACCUCCCCCC	
3969	GGGAGGUGCU G UGGGA	UCCCA UGAUGGCAUGCACUAUGCGCG AGCACCUCCC	
3985	GUAAAUACU G AAUAU	AUAUU UGAUGGCAUGCACUAUGCGCG AGUAUUUUAC	
3993	CUGAAUAUAU G AGUUU	AAACU UGAUGGCAUGCACUAUGCGCG AUAUAUUCAG	
4008	UUUCAGUUUU G AAAAA	UUUUU UGAUGGCAUGCACUAUGCGCG AAAACUGAAA	

Seq1 = TERT (Homo sapiens telomerase reverse transcriptase (TERT) mRNA, 4015 bp); Nakamura et al., Science 277 (5328), 955-959 (1997)

Input Sequence = TERT. Cut Site = YG/M or UG/U.

Stem Length = 5/10. Core Sequence = UGAUG GCAUGCACUAUGC GCG

Table VI: Human telomerase reverse transcriptase (TERT) DNAzyme and Target Sequence

nt. Position	DNAzyme Sequence	Seq. ID Nos	Substrate	Seq. ID Nos
9	CAGGACGC GGCTAGCTACAACGA AGGGCTGC		GCAGGGCT G GGGTCCTG	
11	AGCAGGAC GGCTAGCTACAACGA GCAGGCT		AGCGCTGC G GTCCTGCT	
16	TGCGCAGC GGCTAGCTACAACGA AGGACGGCA		TGGGTCCT G GCTGGGCA	
19	ACGTGCGC GGCTAGCTACAACGA AGCAGGAC		GTCCTGCT G GCGCACGT	
21	CCACGTGC GGCTAGCTACAACGA GCAGCAGG		CCTGCTGC G GCAGTGG	
23	TCCCACGT GGCTAGCTACAACGA GCGCAGCA		TGTGCTGC A ACGTGGGA	
25	CTTCCCAC GGCTAGCTACAACGA GTGCGCAG		CTGCGCAC G GTGGGAAG	
32	GCCAGGGC GGCTAGCTACAACGA TTCCCACG		CGTGGGAA G GCCCTGGC	
38	GCCGGGGC GGCTAGCTACAACGA CAGGGCTT		AAGCCCTG G GGGGGGC	
44	GGGGTGGC GGCTAGCTACAACGA CGGGGCCA		TGGCCCCG G GCCACCCC	
47	GCGGGGGT GGCTAGCTACAACGA GGGGGGG		CCCCGGGC A ACCCCGC	
53	GGCATCGC GGCTAGCTACAACGA GGGGGTGG		CCACCCC G GCGATGCC	
56	CGGGGCAT GGCTAGCTACAACGA CGCGGGGG		CCCCGGCG A ATGCCGCG	
58	CGCGCGGC GGCTAGCTACAACGA ATCGCGGG		CCCGCGAT G GCCGCGCG	
61	GAGCGCGC GGCTAGCTACAACGA GGCATCGC		GCGATGCC G GCGCGCTC	
63	GGGAGCGC GGCTAGCTACAACGA GCGGCATC		GATGCCGC G GCGCTCCC	
65	CGGGGAGC GGCTAGCTACAACGA GCGCGGCA		TGCCGCGC G GCTCCCCG	
72	TCGGCAGC GGCTAGCTACAACGA GGGGAGCG		CGCTCCCC G GCTGCCGA	
75	GGCTCGGC GGCTAGCTACAACGA AGCGGGGA		TCCCCGCT G GCCGAGCC	
80	CGCACGGC GGCTAGCTACAACGA TCGGCAGC		GCTGCCGA G GCCGAGCC	
83	GAGCGCAC GGCTAGCTACAACGA GGCTCGGC		GCCGAGCC G GTGCGCTC	
85	GGGAGCGC GGCTAGCTACAACGA ACGGCTGG		CGAGCCGT G GCGCTCCC	
87	CAGGGAGC GGCTAGCTACAACGA GCACGGCT		AGCCGTGC G GCTCCCTG	
94	TGCGCGAC GGCTAGCTACAACGA AGGGAGCG		CGCTCCCT G GCTCGGCA	
97	GGCTGCGC GGCTAGCTACAACGA AGCAGGGA		CCTGCTGC G GCAGCCAC	
99	GTGGCTGC GGCTAGCTACAACGA GCAGGCAGG		CCTGGGCA G GCCAGCCAC	
102	GTAGTGGC GGCTAGCTACAACGA TGCGCAGC		GCTGGGCA G GCCACTAC	

105	GCGGTAGT	GGCTAGCTACAACGA	GGCTGGC	GCGGAGCC A ACTACCGC
108	CTCGCGGT	GGCTAGCTACAACGA	AGTGGCTG	CAGCCACT A ACCGCGAG
111	CACCTCGC	GGCTAGCTACAACGA	GGTAGTGG	CCACTACC G GGGAGGTG
116	GGCAGCAC	GGCTAGCTACAACGA	CTCGCGGT	ACCGCGAG G GTGGCTGCC
118	GCGGCAGC	GGCTAGCTACAACGA	ACCTCGCG	CGCGAGGT G GCTGCCGC
121	CCAGCGGC	GGCTAGCTACAACGA	AGCACCTC	GAGGTGCT G GCGGCTGG
124	TGGCCAGC	GGCTAGCTACAACGA	GGCAGCAC	GTGGTGCC G GCTGGCCA
128	AACGTGGC	GGCTAGCTACAACGA	CAGCGGCA	TGGCGTC G GCCACGTT
131	ACGAACGT	GGCTAGCTACAACGA	GGCCAGCG	CGCTGGCC A ACGTTCGT
133	GCCACGAAC	GGCTAGCTACAACGA	GTGGCCAC	CTGGGCAC G GTTCGTGC
137	GCCGGCAC	GGCTAGCTACAACGA	GAACGTGG	CCACGTTC G GTGCGGCG
139	GGCGGCGC	GGCTAGCTACAACGA	ACGAACGT	ACGTTCGT G GCGGCTGG
142	CCAGGCGC	GGCTAGCTACAACGA	CGCACGAA	CGTTCGT G GCGGCTGG
144	CCCCAGGC	GGCTAGCTACAACGA	GCCCACGA	CGTTCGTC G GCCTGGGG
151	CCTGGGGC	GGCTAGCTACAACGA	CCCAGGCG	CGCTGGGG G GCCCAGG
159	CGCCCAGC	GGCTAGCTACAACGA	CCTGGGGC	GCCCCAGG G GCTGGGG
163	CCAGCCGC	GGCTAGCTACAACGA	CAGCCCTG	CAGGCCTG G GCGGCTGG
166	GCACCAGC	GGCTAGCTACAACGA	CGCCCAGC	GGCTGGCG G GCCTGGTGC
170	CGCTGCAC	GGCTAGCTACAACGA	CAGCCCGC	GGCGGCTG G GTGCAGCG
172	CGCGCTGC	GGCTAGCTACAACGA	ACCAGCCG	GCGCTGGT G GCAGCG
175	CCCCGCGC	GGCTAGCTACAACGA	TGCACCAG	CTGGTGCA G GGCGGCGG
177	GTCCCGCG	GGCTAGCTACAACGA	GCTGCACC	GGTGCAGC G GCGGGGAC
183	CGCCGGGT	GGCTAGCTACAACGA	CCCGCGGC	GCGCGGGG A ACCCGCGG
188	AAAGCCGC	GGCTAGCTACAACGA	CGGGTCCC	GGGACCCG G GCGGCTTT
191	CGGAAAGC	GGCTAGCTACAACGA	CGGGTCCT	ACCCGCCG G GCTTCCG
198	CAGCGCGC	GGCTAGCTACAACGA	GGGGAAGC	GCGTTCC G GGCGGCTG
200	ACCAGCGC	GGCTAGCTACAACGA	GGGGAAAG	CTTCCGC G GCGCTGGT
202	CCACCAGC	GGCTAGCTACAACGA	GCGGGAA	TTCCGGC G GCTGGTGG
206	TGGGCCAC	GGCTAGCTACAACGA	CAGCGCGC	GCGGGCTG G GTGGCCCA
209	CACTGGGC	GGCTAGCTACAACGA	CACCAGCG	CGCTGGTG G GCCCAGTG
214	CCAGGCAC	GGCTAGCTACAACGA	TGGGCCAC	GTGGGCCA G GTGGCTGG

216	CACCAGGC GGCTAGCTAGCTACAACGA ACTGGGGC	GGCCCAGT G GCCTGGTG
221	ACGCACAC GGCTAGCTACAACGA CAGGCACT	AGTGCCTG G GTGTGCGT
223	GCACGCAC GGCTAGCTACAACGA ACCAGGCA	TGCCTGGT G GTGCGTGC
225	GGGCACGC GGCTAGCTACAACGA ACACAGG	CCTGGTGT G GCGTGCCC
227	CAGGGCAC GGCTAGCTACAACGA GCACACCA	TGGTGTGC G GTGCCCTG
229	CCCAGGGC GGCTAGCTACAACGA ACGGCACAC	GTGTGCGGT G GCCCTGGG
237	CCGTGCGT GGCTAGCTACAACGA CCCAGGGC	GCCCTGGG A ACGGCACGG
239	GGCCGTGC GGCTAGCTACAACGA GTCCCAGG	CCTGGGAC G GCAGGGCGG
241	GCCGTGCGT GGCTAGCTACAACGA GGGTCCCA	TGGGACGG A ACGGCGGG
244	GGGGCCGGC GGCTAGCTACAACGA CGTGCGTC	GACGCACG G GCCGCCCC
247	CGGGGGGC GGCTAGCTACAACGA GGCCGTGC	GCACGGTC G GCCCCCCG
254	GGGCCGGC GGCTAGCTACAACGA GGGCCGGG	CGGGGGC G GCCCCGCC
257	GAGGGGGC GGCTAGCTACAACGA GGGCGGGG	CCCCGGGC G GCCCCCTC
270	CACCTGGC GGCTAGCTACAACGA GGAGGGAG	CTCCTTCC G GCCAGGTG
275	CAGGACAC GGCTAGCTACAACGA CTGGCGGA	TCCGCCAG G GTGTCCTG
277	GGCAGGAC GGCTAGCTACAACGA ACCTGGCG	CGCCAGGT G GTCCTGCC
282	CTTCAGGC GGCTAGCTACAACGA AGGACACC	GGTGTCCT G GCCTGAAG
292	CCACCAGC GGCTAGCTACAACGA TCCTTCAG	CTGAAGGA G GCTTGTGG
296	CGGGCCAC GGCTAGCTACAACGA CAGGTCCT	AGGAGCTG G GTGGCCCG
299	ACTCGGGC GGCTAGCTACAACGA CACCAGCT	AGCTGGTG G GCCCGAGT
305	TGCAGCAC GGCTAGCTACAACGA TCGGGCCA	TGGGCCGA G GTGCTGCA
307	TCTGCAGC GGCTAGCTACAACGA ACTCGGGC	GCCCGAGT G GCTGCAGA
310	GCCCTCTGC GGCTAGCTACAACGA AGCACTCG	CGAGTGCT G GCAGAGGC
316	CGCACAGC GGCTAGCTACAACGA CTCTGCAG	CTGAAGAG G GCTGTGCG
319	GCTCGCAC GGCTAGCTACAACGA	CACAGGCT G GTGCGAGC
321	GCGGCTGGC GGCTAGCTACAACGA ACAGGCTC	GAGGCTGT G GCGAGGCC
325	CCCCGCGC GGCTAGCTACAACGA TCGCACAG	CTGTGCGA G GCGCGCG
327	CGCGGCGC GGCTAGCTACAACGA GCTGGCAC	GTGGGAGC G GCGGGCGC
330	CTTCGGGC GGCTAGCTACAACGA CGGGCTCG	CGAGGCCG G GCGGGAAG
332	TTCTTCGGC GGCTAGCTACAACGA GCGGGCT	AGGCGGGC G GCGAAGAA
339	CAGCACGT GGCTAGCTACAACGA TCTTCGGG	CGGGAAGA A ACGTGCTG

Index	Sequence 1	Sequence 2	Sequence 3
341	GCCAGCAC	GGCTAGCTACAACGA GTTCTTCG	CGAAGAAC G GTGCTGGC
343	AGGCCAGC	GGCTAGCTACAACGA ACGTTCTT	AAGAACGT G GCTGGCCT
347	CCGAAGGC	GGCTAGCTACAACGA CAGCACGT	ACGTGCTG G GCCTTCGG
354	CGGGAAGC	GGCTAGCTACAACGA CGAAGGC	GGCTTCG G GCTTCGG
359	AGCAGCGC	GGCTAGCTACAACGA GAAGCCGA	TCGGCTTC G GCGCTGCT
361	CCAGCAGC	GGCTAGCTACAACGA GCGAAGCC	GGCTTCGC G GCTGCTGG
364	CGTCCAGC	GGCTAGCTACAACGA AGCGCGAA	TTCGCGCT G GCTGGACG
369	GGCCCCGT	GGCTAGCTACAACGA CCAGCAGC	GCTGCTGG A ACGGGGGC
374	CCGGGGGC	GGCTAGCTACAACGA CCGGTCCA	TGGACGGG G GCCCGCGG
378	GCCCCCGC	GGCTAGCTACAACGA GGGCCCCG	CGGGGCCC G GCGGGGGC
384	GGGGGGGC	GGCTAGCTACAACGA CCCCGGGG	CCCGGGGG G GCCCCCCC
395	GTGAAGGC	GGCTAGCTACAACGA CTCGGGGG	CCCCCCAG G GCCTTCAC
401	CTGGTGGT	GGCTAGCTACAACGA GAAGGCT	AGGCCTTC A ACCACCAG
404	ACGGTGGT	GGCTAGCTACAACGA GGTGAAGG	GCTTCACC A ACCAGCGT
408	GCGCACGC	GGCTAGCTACAACGA TGGTGGTG	CACCACCA G GCCTTGCG
410	CTGGCGAC	GGCTAGCTACAACGA GCTGGTGG	CCACCAGC G GTGGCCAG
412	AGCTGCGC	GGCTAGCTACAACGA ACGGCTGGT	ACCAGCGT G GGCCAGCT
414	GTAGCTGC	GGCTAGCTACAACGA GCACGCTG	CAGCGTGC G GCAGCTAC
417	CAGGTAGC	GGCTAGCTACAACGA TGGCGACG	CGTGGCCA G GCTACCTG
420	GGGCAGGT	GGCTAGCTACAACGA AGCTGCGC	GCGACGCT A ACCTGCCC
424	TGTTGGGC	GGCTAGCTACAACGA AGGTAGCT	AGCTACCT G GCCCAACA
429	CACGGTGT	GGCTAGCTACAACGA TGGGCAGG	CCTGCCCA A ACACGGTG
431	GTCACGGT	GGCTAGCTACAACGA GTTGGGCA	TGCCCAAC A ACGGTGAC
434	TCGGTCAC	GGCTAGCTACAACGA CGTGTTGG	CCAACACG G GTTGACGA
437	GCGGTCGGT	GGCTAGCTACAACGA CACGGTGT	ACACGGTG A ACGGAGGC
441	CAGTGCGT	GGCTAGCTACAACGA CGGTCACC	GGTGACCG A ACGGACTG
443	GGCAGTGC	GGCTAGCTACAACGA GTCGGTCA	TGACCGAC G GGACTGCG
445	CCGGCAGT	GGCTAGCTACAACGA GCGTCGGT	ACCGACGC A ACTGCGGG
448	TCCCCCGC	GGCTAGCTACAACGA AGTGCGTC	GACCGACT G GCGGGGGA
456	CGCCCCGC	GGCTAGCTACAACGA TCCCCCGC	GCGGGGGA G GCGGGGGG
461	CCCCAGGC	GGCTAGCTACAACGA CCGGCTCC	GGAGCGGG G GGGCGGGG

463	GCCCCCAC GGCTAGCTACAACGA GCCCCGCT	AGCCCCGC G GTGGGGGC
469	GCAGCCAGC GGCTAGCTACAACGA CCCCACGC	GGGTGGGG G GCTGCTGC
472	GCAGCCAGC GGCTAGCTACAACGA AGCCCCCA	TGGGGGCT G GCTGCTGC
475	GGCGCAGC GGCTAGCTACAACGA AGCAGCC	GGGCTGCT G GCTGCGCC
478	CGGGGCGC GGCTAGCTACAACGA AGCAGCAG	CTGCTGCT G GCGCCGCG
480	CACGGCGGC GGCTAGCTACAACGA GCAGCAGC	GCTGCTGC G GCGGCGTG
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485	TCGCCCAC GGCTAGCTACAACGA GGGGGCA	TGGGCGC G GCGGGGGA
489	GTCGTCGC GGCTAGCTACAACGA CCACGCGG	CCGGGTGG G GCGACGAC
492	CACGTCGT GGCTAGCTACAACGA CGCCCACG	CGTGGGCG A ACGACGTG
495	CAGCACGT GGCTAGCTACAACGA CGTCGGCC	GGGCGACG A ACGTGCTG
497	ACCAGCAC GGCTAGCTACAACGA GTCGTCGC	GCGACGAC G GTGCTGGT
499	GAACCAGC GGCTAGCTACAACGA ACGTCGTC	GACGACGT G GCTGGTTC
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507	CAGCCAGGT GGCTAGCTACAACGA GAACCAGC	GCTGGTTC A ACTTGCTG
511	GTGCCAGC GGCTAGCTACAACGA AGGTGAAC	GTTCACCT G GCTGGCAC
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517	CGCAGCGT GGCTAGCTACAACGA GCCAGCAG	CTGGCTGC A ACGCTGCG
519	GGCGCAGC GGCTAGCTACAACGA GTGCCAGC	GCTGGCAC G GCTGCGCG
522	GAGCGCGC GGCTAGCTACAACGA AGGCTGCC	GGCACGCT G GCGCGGTC
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526	CAAAGAGC GGCTAGCTACAACGA GGCAGCGC	GGCTGCGC G GCTCTTTG
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539	GGAGCCAC GGCTAGCTACAACGA CAGCACAA	TTGTGCTG G GTGGCTCC
542	CTGGGAGC GGCTAGCTACAACGA CACCAGCA	TGTGGTG G GTTCCCAG
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565	GCCCGCAC	GGCTAGCTACAACGA	AGCTGGTA	TACCAGGT	G	GTGCGGGC
567	CGGCCCGC	GGCTAGCTACAACGA	ACACCTGG	CCAGGTGT	G	GCGGGCCG
571	GCGGCCGGC	GGCTAGCTACAACGA	CCGCACAC	GTGTGCGG	G	GCCGCCGC
574	ACAGCCGGC	GGCTAGCTACAACGA	CCGCACAC	TGCCGGGC	G	GCCGCTGT
577	GGTACAGC	GGCTAGCTACAACGA	GGGGGCCC	GGGCCCGC	G	GCTGTACC
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593	GTGGCAGC	GGCTAGCTACAACGA	GCCGAGCT	AGCTGGGC	G	GCTGCCAC
596	TGAGTGGC	GGCTAGCTACAACGA	AGGGGGGA	TCGGCGCT	G	GCCACTCA
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616	CGTGTGGC	GGCTAGCTACAACGA	GGGGGCCG	GGGCCCC	G	GCCACACG
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627	GGGTCCAC	GGCTAGCTACAACGA	TAGCGTGT	ACAGCGTA	G	GTGGACCC
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707	CCCGGGGC	GGCTAGCTACAACGA	TGGCAGGC	GCCTGCCA	G	GCCCCGGG
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1512	GAGGAAGC GGCTAGCTACTACAACGA GGCGTTCG		CGAACGGC G GCTTCCTC
1524	CTTGGTGT GGCTAGCTACTACAACGA TTCTGAGG		CCTCAGGA A ACACAAG
1526	TTCTTGGT GGCTAGCTACTACAACGA GTTCCTGA		TCACGAAC A ACCAAGAA
1534	AGATGAAC GGCTAGCTACTACAACGA GAACTTGT		ACCAAGAA G GTTCATCT
1538	AGGGAGAT GGCTAGCTACTACAACGA TTCTTGGT		AGAAGTTC A ATCTCCCT
1552	TGGCATGC GGCTAGCTACTACAACGA TTCCCTAG		CTGGGGAA G GCATGCCA
1554	CTTGGCAT GGCTAGCTACTACAACGA GCTCCCC		GGGGAAGC A ATGCCAAG
1556	AGCTTGGC GGCTAGCTACTACAACGA ATGCTTCC		GGAAAGCAT G GCCAAGCT
1561	GCGAGAGC GGCTAGCTACTACAACGA TTGGCATG		CATGCTAA G GCTCTCGC
1567	CCTGCAGC GGCTAGCTACTACAACGA GAGAGCTT		AAGCTCTC G GCTGCAGG
1570	GCTCCTGC GGCTAGCTACTACAACGA AGGGAGAG		CTCTGGCT G GCAGGAGC
1576	ACGTCAGC GGCTAGCTACTACAACGA TCCTGCAG		CTGCAGGA G GCTGACGT
1580	TTCCAGGT GGCTAGCTACTACAACGA CAAGCTCT		AGGAGCTG A ACGTGGAA
1582	TCTTCCAC GGCTAGCTACTACAACGA GTCAGCTC		GAGCTGAC G GTGGAAGA
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1595	TCCCGCAC GGCTAGCTACTACAACGA ...		AGATGAG G GTGCGGGA
1597	AGTCCCGC GGCTAGCTACTACAACGA ACGGCTCAT		ATGAGCGT G GCGGGACT
1602	AGCGCAGT GGCTAGCTACTACAACGA CCCGCACG		CGTCGGGG A ACTGCGCT
1605	CCAAGCGC GGCTAGCTACTACAACGA AGTCCCGC		GCGGGACT G GCGGTTGG
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1612	TGGGCAGC GGCTAGCTACTACAACGA CAAGCGCA		TGGGCTTG G GCTGCGCA
1615	TCCTGCGC GGCTAGCTACTACAACGA AGCCAAGC		GCTTGGCT G GCGGAGGA
1617	GCTCCTGC GGCTAGCTACTACAACGA GCAGCCAA		TTGGTGC G GCAGGAGC
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1631	CAGCCAAC GGCTAGCTACTACAACGA TCCTGGCG		GCCCAGGG G GTTGGCTG
1635	AACACAGC GGCTAGCTACTACAACGA CAACCCCT		AGGGGTTG G GCTGTGTT

1638	CGGAACAC	GGCTAGCTACTACAAGGA	AGCCAACC	GGTTGGGCT	G	GTGTTCCG
1640	GCCGGAAC	GGCTAGCTACTACAAGGA	ACAGCCAA	TTGGCTGT	G	GTTCCGGC
1646	TCTGCGGC	GGCTAGCTACTACAAGGA	CGGAAACAC	GTGTTCCG	G	GCCGCAGA
1649	TGCTCTGC	GGCTAGCTACTACAAGGA	GGCCGGAA	TTCCGGCC	G	GCAGAGCA
1654	GACGGGTGC	GGCTAGCTACTACAAGGA	TCTGCGGC	GCCGCAGA	G	GCACGGTC
1656	CAGACGGT	GGCTAGCTACTACAAGGA	GCTCTGCG	GGCAGAGC	A	ACGGTCTG
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1663	GCCAGGAT	GGCTAGCTACTACAAGGA	CTCCTCAC	GTGAGGAG	A	ATCCTGGC
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1690	GCCAGTGC	GGCTAGCTACTACAAGGA	AGGAACTT	AAGTTCCT	G	GCACTGGC
1692	CAGCTAGT	GGCTAGCTACTACAAGGA	GCAGGAAC	GTTCTGC	A	ACTGGTG
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1700	ACACTCAT	GGCTAGCTACTACAAGGA	CAGCCAGT	ACTGGCTG	A	ATGAGTGT
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1706	ACGTACAC	GGCTAGCTACTACAAGGA	ACTCATCA	TGATGAGT	G	GTGTACGT
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1715	AGCTCGAC	GGCTAGCTACTACAAGGA	GACGTACA	TGTACGTC	G	GTCGAGCT
1720	TGAGCAGC	GGCTAGCTACTACAAGGA	TCGACGAC	GTCGTCGA	G	GCTGCTCA
1723	ACCTGAGC	GGCTAGCTACTACAAGGA	AGCTCGAC	GTCGAGCT	G	GCTCAGGT
1729	AGAAAGAC	GGCTAGCTACTACAAGGA	CTGAGCAG	CTGGTCAG	G	GTCTTTCT
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1751	AACGTGGT	GGCTAGCTACTACAAGGA	CTCCGTGA	TCACGGAG	A	ACCACGTT
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1767	GAGCCTGT	GGCTAGCTACAACGA	TCTTTTGA				
1771	AAAAGAGC	GGCTAGCTACAACGA	CTGTTCTT		TCAAAAGA	A	ACAGGCTC
1782	CTTCCGGT	GGCTAGCTACAACGA	AGAAAAAG		AAGAACAG	G	GCTCTTTT
1791	CCAGACAC	GGCTAGCTACAACGA	TCTCCGG		CCGGAAGA	G	GTGTCTGG
1793	CTCCAGAC	GGCTAGCTACAACGA	ACTCTTCC				
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1804	TTTGCAAC	GGCTAGCTACAACGA	TTGCTCCA		TGGAGCAA	G	GTTGCAAA
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1814	ATTCCAAT	GGCTAGCTACAACGA	GCTTTGCA		TGCAAAGC	A	ATTGGAAT
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1825	AGTGCTGT	GGCTAGCTACAACGA	CTGATTCC		GGAATCAG	A	ACAGCACT
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1894	GGGCCAGGC	GGCTAGCTACAACGA	CTGGCTTG		GAAGTCAG	G	GCCGGCC
1898	AGGCAGGGC	GGCTAGCTACAACGA	AGGCCTGG		CCAGGCAG	G	GCCCTGCT
1903	ACGTCAGC	GGCTAGCTACAACGA	AGGGCGGG		CCTGGCCT	G	GCTGACGT
1907	CTGGACGT	GGCTAGCTACAACGA	CAGCAGGG		CCCTGCTG	A	AGGTCCAG
1909	GTCTGGAC	GGCTAGCTACAACGA	GTCAGGCAG		CTGCTGAC	G	GTCCAGAC

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1920	GATGAAGC GGCTAGCTAGCTACAACGA GGAGTCTG	CAGACTCC G GCTTCATC
1925	TTGGGGAT GGCTAGCTAGCTACAACGA GAAGCGGA	TCGGCTTC A ATCCCCAA
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1938	CAGCCCGT GGCTAGCTAGCTACAACGA CAGGCTTG	CAAGCCTG A ACGGGCTG
1942	GCCGCAGC GGCTAGCTAGCTACAACGA CCGTCAGG	CCTGACGG G GCIGCGGC
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1968	CACGAGT GGCTAGCTAGCTACAACGA AGTCCATG	CATGGACT A ACGTCGTG
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1985	CGGAACGT GGCTAGCTAGCTACAACGA TCTGGCTC	GAGCCAGA A ACGTTCCG
1987	TGCGGAAC GGCTAGCTAGCTACAACGA GTTCTGGC	GCCAGAAC G GTTCCGCA
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2006	CGCTCGGC GGCTAGCTACAACGA CCTCTTT	AAAAGAGG G GCGGAGCG
2011	TGAGACGC GGCTAGCTAGCTACAACGA TCGGCCCT	AGGGCCGA G GCGTCTCA
2013	GGTGAGAC GGCTAGCTAGCTACAACGA GCTCGGCC	GGCCGAGC G GTCTCACC
2018	CTCGAGGT GGCTAGCTAGCTACAACGA GAGACGCT	AGGGTCTC A ACCTCGAG
2027	GCCTCAC GGCTAGCTAGCTACAACGA CCTCGAGG	CCTCGAGG G GTGAAGGC
2033	AACAGTGC GGCTAGCTAGCTACAACGA CTTCACCC	GGGTGAAG G GCAACTGTT
2035	TGAACAGT GGCTAGCTAGCTACAACGA GCCTTCAC	GTGAAGGC A ACTGTTCA
2038	CGCTGAAC GGCTAGCTAGCTACAACGA AGTGCCTT	AAGGAGG G CTTTAGCG
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2052	CTCGTAGT GGCTAGCTACAACGA TGAGCACG		CGTGCTCA A ACTACGAG	
2055	CCGCTCGT GGCTAGCTACAACGA AGTTGAGC		GCTCAACT A ACGAGCGG	
2059	GCGGCCGC GGCTAGCTACAACGA TCGTAGTT	AACTACGA G GCGGGCGC	
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2065	GGGGCCGC GGCTAGCTACAACGA GCGGGCTC	GAGCGGGC G GCGGCGCC	
2068	GGGGGGGC GGCTAGCTACAACGA CGGCGCCG	CGGGCGCG G GCGCCCCG	
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2085	AGAGGCGC GGCTAGCTACAACGA CCAGGAGG	GCGGCCCG G GGCCTCCT	
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2095	GGCCCAGC GGCTAGCTACAACGA ACAGAGGC	GCGCTGT G GCCTGGAC	
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2106	GATATCGT GGCTAGCTACAACGA CCAGGCCC	CCTGGACG A ATATCCAC	
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2135	CGCAGCAC GGCTAGCTACAACGA GAAGGTGC	ACCTTCGT G GCTGCGTG	
2137	CACGCAGC GGCTAGCTACAACGA ACGAAGGT	TTCGTTCT G GCGTGTGC	
2140	GCACGCGC GGCTAGCTACAACGA AGCACGAA	CGTGTTC G GTGTGCGG	
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2150	TCCTGGGC GGCTAGCTACAACGA CCGCACAC	GTGTGCGG G GCCCAGGA	
2157	CGGCGGGT GGCTAGCTACAACGA CCTGGGC	GGGCCAGG A ACCCGCG	
2161	CAGGCGGC GGCTAGCTACAACGA GGGTCCTG	CAGGACCC G GCCGCCTG	
2164	GCTCAGGC GGCTAGCTACAACGA GGGCCCTC	GACCCGGC G GCCTGAGC	

No.	Sequence		Tail
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2175	GACAAAGT GGCTAGCTAGCTACAACGA ACAGCTCA		TGAGCTGT A ACTTTGTC
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2186	ACATCCAC GGCTAGCTAGCTACAACGA CTTGACAA		TTGTCAAG G GTGGATGT
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2192	CCCGTCAC GGCTAGCTAGCTACAACGA ATCCACCT		AGGTGGAT G GTGACGGG
2195	GCGGCCGT GGCTAGCTAGCTACAACGA CACATCCA		TGGATGTG A ACGGCGC
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2205	GGTGTCGT GGCTAGCTAGCTACAACGA ACGGCCC		GGGCGCGT A ACGACACC
2208	GATGGTGT GGCTAGCTAGCTACAACGA CGTACGCG		CGGGTACG A ACACCATC
2210	GGGATGGT GGCTAGCTAGCTACAACGA GTCGTACG		CGTACGAC A ACCATCCG
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2223	GAGCCTGT GGCTAGCTAGCTACAACGA CCTGGGGG		CCCCAGG A ACAGGCTC
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2237	GCGGATGAC GGCTAGCTACAACGA CTCCGTGA		TCACGGAG G GTCATCGC
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2243	ATGCTGGC GGCTAGCTAGCTACAACGA GATGACCT		AGGTCATC G GCCAGCAT
2247	GATGATGC GGCTAGCTAGCTACAACGA TGGCGATG		CATCGCCA G GCATCATC
2249	TTGATGAT GGCTAGCTAGCTACAACGA GCTGGCGA		TCGCCAGC A ATCATCAA
2254	GGTTTGAT GGCTAGCTAGCTACAACGA GATGCTGG		CCAGCATC A ATCAAACC
2257	TCTGGGGT GGCTAGCTAGCTACAACGA TTGATGAT		ATCATCAA A ACCCCAGA
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2284	CGGCATAC	GGCTAGCTACAACGA CGACGCAC		GTGCGTCG	G GTATGCCG
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2291	TGGACCAC	GGCTAGCTACAACGA GGCATACC		GGTATGCC	G GTGGTCCA
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2314	GGACGTGC	GGCTAGCTACAACGA CCATGGGC		GCCCATGG	G GCACGTCC
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2327	TTGAAGGC	GGCTAGCTACAACGA CTTGCGGA		TCGGCAAG	G GCTTCAA
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2340	AGAGACGT	GGCTAGCTACAACGA GGCTCTTG		CAAGAGCC	A ACGTCTCT
2342	GTAGAGAC	GGCTAGCTACAACGA GTGCCTCT		AGAGCCAC	G GTTTCTAC
2348	GTCAAGGT	GGCTAGCTACAACGA AGAGACGT		ACGTCTCT	A ACGTTGAC
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2358	CTGGAGGT	GGCTAGCTACAACGA CTGTCAAG		CTTGACAG	A ACCTCCAG
2365	TGTACGGC	GGCTAGCTACAACGA TGGAGGTC		GACCTCCA	G GCGGTACA
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2369	TCGGCATGT	GGCTAGCTACAACGA ACGGCTGG		CCAGCCGT	A ACATGCGA
2370	TGTCGCAT	GGCTAGCTACAACGA GTACGGCT		AGCGTAC	A ATGCGACA
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2374	CGAACTGT	GGCTAGCTACAACGA CGCATGTA		TACATGCG	A ACAGTTCG
2377	CCACGAAC	GGCTAGCTACAACGA TGTCGCAT		ATGCGACA	G GTTCGTGG
2380	TGGAGCCAC	GGCTAGCTACAACGA GAACTGTC		GACAGTTC	G GTGGCTCA
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2391					

ID	Sequence		Sequence	
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2456	CTGCTGGC GGCTAGCTACAACGA CTCATTCA		TGAATGAG G GCCAGCAG	
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2466	GAAGAGGC GGCTAGCTACAACGA CACTGCTG		CAGCAGTG G GCCTCTTC	
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2538	CCCCTGGC GGCTAGCTACAACGA ACTGGACG		CGTCCAGT G GCCAGGGG	
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2570	AGCAGCGT GGCTAGCTACAACGA GGAGAGGA		TCCTCTCC A ACGCTGCT	
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2580	CAGGCTGC GGCTAGCTACAACGA AGAGCAGC		GCTGCTCT G GCAGCCTG	
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2595	CATGTCGC GGCTAGCTACAACGA CGTAGCAC		GTGCTACG G GCGACATG	
2598	CTCCATGT GGCTAGCTACAACGA CGCCGTAG		CTACGGCG A ACATGGAG	
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2614	CCGCAAAC GGCTAGCTACAACGA AGCTTGTT		AACAAGCT G GTTTGCGG	
2618	ATCCCCGC GGCTAGCTACAACGA AAACAGCT		AGCTGTTT G GCGGGGAT	
2624	CGCCGAAT GGCTAGCTACAACGA CCCCGCAA		TTGCGGGG A ATTCGGCG	
2629	CGTCCCGC GGCTAGCTACAACGA CGAATCCC		GGGATTCG G GCGGGACG	
2634	CAGCCCGT GGCTAGCTACAACGA CCCGCCGA		TCGGCGGG A ACGGGCTG	
2638	GGAGCAGC GGCTAGCTACAACGA CCGTCCCG		CGGGACGG G GCTGCTCC	
2641	GCAGGAGC GGCTAGCTACAACGA AGCCCGTC		GACGGGCT G GCTCCTGC	
2647	CCAAACGC GGCTAGCTACAACGA AGGAGCAG		CTGCTCCT G GCGTTTGG	
2649	CACCAAAC GGCTAGCTACAACGA GCAGGAGC		GCTCCTGC G GTTTGGTG	

2654	TCATCCAC GGCTAGCTACAACGA CAAACGCA		
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2661	CAAGAAAT GGCTAGCTACAACGA CATCCACC	TTTGGTGG A ATGATTTC	
2668	TCACCAAC GGCTAGCTACAACGA AAGAAATC	GGTGGATG A ATTTCTTG	
2672	GGTGTCAC GGCTAGCTACAACGA CAACAAGA	GATTTCTT G GTTGGTGA	
2675	TGAGGTGT GGCTAGCTACAACGA CACCAACA	TCTTGTTG G GTGACACC	
2677	GGTGAGGT GGCTAGCTACAACGA GTCACCAA	TGTTGGTG A ACACCTCA	
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2691	TTTCGCGT GGCTAGCTACAACGA GGGTGAGG	CCTCACCC A ACGCGAAA	
2693	GTTTTCGC GGCTAGCTACAACGA GTGGGTGA	TCACCCAC G GCGAAAAC	
2699	AGGAAGGT GGCTAGCTACAACGA TTTCGCGT	ACGCGAAA A ACCTTCCT	
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2717	CCTCGGAC GGCTAGCTACAACGA CAGGGTCC	GGACCCTG G GTCGGAGG	
2724	AGGGACAC GGCTAGCTACAACGA CTCGGACC	GGTCGGAG G GTGTCCCT	
2726	TCAGGGAC GGCTAGCTACAACGA ACCTCGGA	TCCGAGGT G GTCCCTGA	
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2736	GCNGCCAT GGCTAGCTACAACGA ACTCAGGG	CCTGAGGT A ATGGCTGC	
2739	CACGCCAGC GGCTAGCTACAACGA CATACTCA	TGAGTATG G GCTGCGTG	
2742	CACCACGC GGCTAGCTACAACGA AGCCATAC	GTATGGCT G GCGTGGTG	
2744	TTCACCAC GGCTAGCTACAACGA GCAGCCAT	ATGGCTGC G GTGGTGAA	
2747	AAGTTCAC GGCTAGCTACAACGA CACGCAGC	GCTGCGTG G GTGAAGTT	
2751	CCGCAAGT GGCTAGCTACAACGA TCACCACG	CGTGGGTGA A ACTTGCGG	
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2772	AGGGAAGT GGCTAGCTACAACGA TCACCACT	AGTGGTGA A ACTTCCCT	
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2787	GGCCTCGT GGCTAGCTACAACGA CTTCTACA	TGTAGAAG A ACGAGGCC	
2792	CCCAGGGC GGCTAGCTACAACGA CTCTTTTT	AAGACGAG G GCCCTGGG	

2799	CGTGCCAC	GGCTAGCTAGCTACAACGA	CCAGGGGC		GGCCCTGG G GTGGCACG
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2804	AAAGCGGT	GGCTAGCTAGCTACAACGA	GCCACCCA		TGGGTGGC A ACGGCTTT
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2813	ATCTGAAC	GGCTAGCTAGCTACAACGA	AAAAGCGG		CGGCTTTT G GTTCAGAT
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2821	GGGCGGGC	GGCTAGCTAGCTACAACGA	ATCTGAAC		GTTCAGAT G GCCGGCCC
2825	CCGTGGGC	GGCTAGCTAGCTACAACGA	GGGCGGGC		GCCGGCCC A ACGGCCTA
2829	TAGGCCGT	GGCTAGCTAGCTACAACGA	CGGCCGGC		GCCGGCCC A ACGGCCTA
2832	GAATAGGC	GGCTAGCTAGCTACAACGA	CGTGGGCC		GGGCCACG G GCCTATTC
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2845	GGCCGCAC	GGCTAGCTAGCTACAACGA	CAGGGGAA		TTCCCCTG G GTGCGGCC
2847	CAGGCCGC	GGCTAGCTAGCTACAACGA	ACCAGGGC		CCCTGGGT G GCGGCCTG
2850	CAGCAGGC	GGCTAGCTAGCTACAACGA	CGCAGTAG		CTGGTGCG G GCCTGCTG
2854	CCAGCAGC	GGCTAGCTAGCTACAACGA	AGGCCGCA		TGCGGCCT G GCTGCTGG
2857	TATCCAGC	GGCTAGCTAGCTACAACGA	AGCAGGCC		GGCCTGCT G GCTGGATA
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2870	TCCAGGGT	GGCTAGCTAGCTACAACGA	CCGGGTAT		ATACCCGG A ACCCTGGA
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2889	GTAGTAGT	GGCTAGCTAGCTACAACGA	CGTCTTGC		GCAGAGCG A ACTACTCC
2892	GCTGGAGT	GGCTAGCTAGCTACAACGA	AGTCGCTC		GAGCGACT A ACTCCAGC
2898	GGGCATAGC	GGCTAGCTAGCTACAACGA	TCGACTAG		CTACTCTA G GCTATGCC
2901	CCGGGCAT	GGCTAGCTAGCTACAACGA	AGCTGGAG		CTCCAGCT A ATGCCCGG
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2909	ATGGAGGT	GGCTAGCTAGCTACAACGA	CGGGCAT		ATGCCCGG A ACCTCCAT
2915	GCTCTGAT	GGCTAGCTAGCTACAACGA	GGAGGTCC		GGACCTCC A ATCAGAGC
2921	AGACTGGC	GGCTAGCTAGCTACAACGA	TCTGATGG		CCATCAGA G GCCAGTCT
2925	GGTGAGAC	GGCTAGCTAGCTACAACGA	TGGCTCTG		CAGAGCCA G GTCTCACC

ID						
2930	TTGAAGGT	GGCTAGCTACAAGGA	GAGACTGG	CCAGTCTC	A	ACCTTCAA
2927	GCCGCGGT	GGCTAGCTACAAGGA	TGAAGGTG	CACCTTCA	A	ACCGCGGC
2940	GAAGCGGC	GGCTAGCTACAAGGA	GGTTGAAG	CTTCAACC	G	GCTTCAAG
2943	CTTGAAGC	GGCTAGCTACAAGGA	CGCCGTTG	CAACCGCG	G	GCTTCAAG
2951	CTCCCAGC	GGCTAGCTACAAGGA	CTTGAAGC	GCTTCAAG	G	GCTGGGAG
2961	ACGGCATGT	GGCTAGCTACAAGGA	TCCTCCA	TGGGAGGA	A	ACATGCGT
2963	CGACGGCAT	GGCTAGCTACAAGGA	GTTCCTCC	GGAGGAAC	A	ATGCCGTCG
2965	TGCGACGGC	GGCTAGCTACAAGGA	ATGTTCCT	AGGAACAT	G	GCGTCGCA
2967	TTTGCGGAC	GGCTAGCTACAAGGA	GCATGTTC	GAACATGC	G	GTCGCAA
2970	GAGTTTGC	GGCTAGCTACAAGGA	GACGCATG	CATGCGTC	G	GCAAACTC
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2984	CGCAAGAC	GGCTAGCTACAAGGA	CCCAAAGA	TCTTTGGG	G	GTCTTGCG
2989	TCAGCCGC	GGCTAGCTACAAGGA	AAGACCCC	GGGTCTTT	G	GCGGCTGA
2992	ACTTCAGC	GGCTAGCTACAAGGA	CGCAAGAC	GTCTTGCG	G	GCTGAAGT
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3006	AAACAGGC	GGCTAGCTACAAGGA	TGTGACAC	GTGTCACA	G	GCCTGTTT
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3041	CACACCGT	GGCTAGCTACAAGGA	CTGGAGGC	GCCTCCAG	A	ACGGTGTG
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3046	TGGTGCAC	GGCTAGCTACAACTA	ACGGTCTG	GACACGGT	G	GTGCACCA
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3050	ATGTTGGT	GGCTAGCTACAAGGA	GCACACCG	GGTGTGC	A	ACCAACAT
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ID	Sequence	Mid	End
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3065	AGGAGGAT GGCTAGCTACAACGA CTTGTAGA		TCTACAAG A ATCCTCCT
3073	CCTGCAGC GGCTAGCTACAACGA AGGAGGAT		ATCCTCCT G GCTCTAGG
3076	ACGCCTGC GGCTAGCTACAACGA AGCAGGAG		CTCCTGCT G GCAGGCGT
3080	CTGTACGC GGCTAGCTACAACGA CTGCAGCA		TGCTGCAG G GCGTACAG
3082	ACCTGTAC GGCTAGCTACAACGA GCCTGCAG		CTGCAGGC G GTACAGGT
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3093	ACATGCGT GGCTAGCTACAACGA GAAACCTG		CAGGTTTC A AGGCATGT
3095	ACACATGC GGCTAGCTACAACGA GTGAAACC		GGTTCAC G GCATGTGT
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3115	GATGAAAT GGCTAGCTACAACGA GGGAGCTG		CAGGCTCC A ATTTCATC
3120	TTGCTGAT GGCTAGCTACAACGA GAAATGGG		CCCATTTC A ATCAGCAA
3124	AAACTTGC GGCTAGCTACAACGA TGATGAAA		TTTCATCA G GCAAGTTT
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3138	TGTGGGGT GGCTAGCTACAACGA TCTTCCAA		TTGGAAGA A ACCCCACA
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3154	TGACGCGC GGCTAGCTACAACGA AGGAAAAA		TTTTTCCT G GCGCGTCA
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3173	AGGGAGGC GGCTAGCTACAACGA CGTGTCAG		CTGACAGG G GCCTCCCT
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3207	CCCTGCCT	GGCTAGCTACAACGA	TCTTGGCT		AGCTAAGA A ACGCAGGG
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3274	GGTGGCAC	GGCTAGCTACAACGA	AGCCACTG		CAGTGGCT G GTGCCACC
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3298	GAGTCAGC	GGCTAGCTACAACGA	TTGGAGGC		CTGCTCAA G GCTGACTC
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3307	CACGGTGT	GGCTAGCTACAACGA	CGAGTCAG		CTGACTCG A ACACGGTG
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3321	TGTCACGT	GGCTAGCTACAACGA	AGGTGACA	TGTCACTT A AGGTGCCA
3323	AGTGGCAC	GGCTAGCTACAACGA	GTAGGTGA	TCACCTAC G GTGCCACT
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3337	TGAGTGAC	GGCTAGCTACAACGA	CCCAGGAG	CTCCTGGG G GTCACTCA
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3450	CCATCAGT	GGCTAGCTACAACGA	CCAGGATG	CATCCTGG A ACTGATGG
3454	GTGGCCAT	GGCTAGCTACAACGA	CAGTCCAG	CTGGACTG A ATGGCCAC

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3559	CTCCCAGC GGCTAGCTACAACGA GGTGCGG		CCCGCACC G GCTGGGAG
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3573	ACTCAGGC GGCTAGCTACAACGA CTCAGACT		AGTCTGAG G GCCTGAGT
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3600	GGACATGC GGCTAGCTACAACGA AGGCCTCG	CGAGGCCT G GCAGTGTCC
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3634	GCTCAGGC GGCTAGCTACAACGA CTCAGCCG	CGGCTGAG G GCTGAGC
3640	ACACTCGC GGCTAGCTACAACGA TCAGGCCT	AGGCCTGA G GCGAGTGT
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3646	GGCTGGAC GGCTAGCTACAACGA ACTCGCTC	GAGCGAGT G GTCCAGCC
3651	CCCTTGGC GGCTAGCTACAACGA TGGACACT	AGTGTCCA G GTCAAGGG
3658	CACTCAGC GGCTAGCTACAACGA CTTGGCT	AGCCAAGG G GCTGAGTG
3663	CTGGACAC GGCTAGCTACAACGA TCAGCCCT	AGGGCTGA G GTGTCCAG
3665	TGCTGGAC GGCTAGCTACAACGA ACTCAGCC	GGCTGAGT G GTCCAGCA
3670	AGGTGTGC GGCTAGCTACAACGA TGGACACT	AGTGTCCA G GCACACCT
3672	GCAGGTGT GGCTAGCTACAACGA GCTGGACA	TGTTCAGC A ACACCTGC
3674	CGGGCAGT GGCTAGCTACAACGA GTGCTGGA	TCCAGCAC A ACCTGCCG
3678	AAGACGGC GGCTAGCTACAACGA AGGTGTGC	GCACACTT G GCCGTCTT
3681	GTGAAGAC GGCTAGCTACAACGA GGCCAGGTG	CCGTCTTC A ACTTCCCC
3687	GGGGAAGT GGCTAGCTACAACGA GAAGACGG	CACTTCCC A ACTTCCCC
3695	CAGCCTGT GGCTAGCTACAACGA GGGGAAGT	ACTTCCCC A ACAGGCTG
3699	GGGCCAGC GGCTAGCTACAACGA CTGTGGG	CCCCACAG G GCTGGGCG
3703	CCGAGCGC GGCTAGCTACAACGA CAGCCTGT	ACAGGCTG G GCGGTCGG
3705	AGGCCGAG GGCTAGCTACAACGA GCCAGCCT	AGGCTGGC G GTCGGCT
3710	GGTGGAGC GGCTAGCTACAACGA CGAGCGC	GGGGCTGG G GCGGCCAC
3715	CCTGGGGT GGCTAGCTACAACGA GGAGGCGA	TGGGTCC A ACCCCAGG
3723	AAGGCTGGC GGCTAGCTACAACGA CCTGGGGT	ACCCAGG G GCCAGCTT
3727	GGAAAAGC GGCTAGCTACAACGA TGGGCCTG	CAGGGCCA G GCTTTCC

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3737	CTCCTGTT GGCTAGCTACAACGA GAGGAAAA	TTTTCCTC A ACGAGGAG
3744	AGCCGGGC GGCTAGCTACAACGA TCCTGGTG	GACTAGGA G GCCCGGCT
3749	GTGGAAGC GGCTAGCTACAACGA CGGGTTCC	GGAGCCCG G GCTTCCAC
3755	TGGGGAGT GGCTAGCTACAACGA GGAAGCCG	CGGTTCC A ATCCCCA
3762	TCCTATGT GGCTAGCTACAACGA GGGGAGTG	CACTCCCC A ACATAGGA
3764	ATTCCTAT GGCTAGCTACAACGA GTGGGGAG	CTCCCCAC A ATAGGAAT
3770	TGGACTAT GGCTAGCTACAACGA TCCTATGT	ACATAGGA A ATAGTCA
3773	GGATGGAC GGCTAGCTACAACGA TATTCCTA	TAGGAATA G GTCCATCC
3777	CTGGGGAT GGCTAGCTACAACGA GGACTATT	AATAGTCC A ATCCCCAG
3785	TGGCGGAT GGCTAGCTACAACGA CTGGGGAT	ATCCCCAG A ATTCGGCA
3789	ACAATGGC GGCTAGCTACAACGA GAATCTGG	CCAGAATC G CCCATTGT
3792	TGAACAAT GGCTAGCTACAACGA GGCGAATC	GATTCGGCC A ATTGTTCA
3795	GGGTGAAC GGCTAGCTACAACGA AATGGCGA	TCGGCCATT G GTTCACCC
3799	CGAGGGGT GGCTAGCTACAACGA GAACAATG	CATTGTTC A ACCCCTCG
3806	GGCAGGGC GGCTAGCTACAACGA GAGGGGTG	CACCCCTC G GCCCTGCC
3811	AGGAGGGC GGCTAGCTACAACGA AGGGCGAG	CTCGCCCT G GCCCTCCT
3821	TGGAAGGC GGCTAGCTACAACGA AAAGGAGG	CCTCCTTT G GCCTTCCA
3828	GTGGGGGT GGCTAGCTACAACGA GGAAGGCA	TGCCTTCC A ACCCCAC
3834	TGGATGGT GGCTAGCTACAACGA GGGGGTGG	CTACCCGC A ACCATCCA
3837	ACCTGGAT GGCTAGCTACAACGA GGTGGGGG	CCCCACC A ATCCAGGT
3843	GTCTCCAC GGCTAGCTACAACGA TTGGATGG	CTATCCAG G GTGGAGAC
3849	CTCAGGGT GGCTAGCTACAACGA CTCCACCT	AGGTGGAG A ACCCTGAG
3861	CCCAGGGT GGCTAGCTACAACGA CCTTCTCA	TGAGAAGG A ACCCTGGG
3870	CCCAGAGC GGCTAGCTACAACGA TCCCAGGG	CCCTGGGA G GCTCTGGG
3879	CTCCAAAT GGCTAGCTACAACGA TCCCAGAG	CTCTGGGA A ATTTGGAG
3886	TTGGTCAC GGCTAGCTACAACGA TCCAAATT	AATTTGGA G GTGACCAA
3889	CCTTTGGT GGCTAGCTACAACGA CACTCCAA	TTGGAGTG A ACCAAAGG
3896	GGGCACAC GGCTAGCTACAACGA CTTTTGGTC	GACCAAAG G GTGTCCC
3898	CAGGGCAC GGCTAGCTACAACGA ACCTTTGG	CCAAAGGT G GTGCCCTG
3900	TACAGGGC GGCTAGCTACAACGA ACACCTTT	AAAGGTGT G GCCCTGTA
3905	CTGTGTAC GGCTAGCTACAACGA AGGGCACA	TGTGCCCT G GTACACAG

3907	GGCTGTGT	GGCTAGCTACAACGA	ACAGGGCA		TGCCCTGT	A	ACAGAGGC
3909	TCGCCTGT	GGCTAGCTACAACGA	GTACAGGG		CCCTGTAC	A	ACAGGGGA
3913	GTCCTGGC	GGCTAGCTACAACGA	CTGTGTAC		GTACACAG	G	GCGAGGAC
3919	TGCAGGGT	GGCTAGCTACAACGA	CCTCGCCT		AGGCGAGG	A	ACCCTGCA
3924	CCAGGTGC	GGCTAGCTACAACGA	AGGGTCCT		AGGACCCT	G	GCACCTGG
3926	ATCCAGGT	GGCTAGCTACAACGA	GCAGGGTC		GGGTCCCT	G	GTGGGTCA
3932	ACCCCCAT	GGCTAGCTACAACGA	CCAGGTGC		GCACCTGG	A	ATGGGGGT
3938	ACAGGGAC	GGCTAGCTACAACGA	CCCCATCC		GGATGGGG	G	GTCCCTGT
3944	TGACCCAC	GGCTAGCTACAACGA	AGGGACCC		GGGTCCCT	G	GTGGGTCA
3948	AATTTGAC	GGCTAGCTACAACGA	CCACAGGG		CCCTGTGG	G	GTCAAATT
3953	CCCCCAAT	GGCTAGCTACAACGA	TTGACCCA		TGGGTCAA	A	ATTGGGGG
3964	CACAGCAC	GGCTAGCTACAACGA	CTCCCCCC		GGGGGGAG	G	GTGCTGTG
3966	CCCACAGC	GGCTAGCTACAACGA	ACTCCCC		GGGGGAGT	G	GCTGTGGG
3969	ACTCCCAC	GGCTAGCTACAACGA	AGCACCTC		GAGGTGCT	G	GTGGGAGT
3975	TATTTTAC	GGCTAGCTACAACGA	TCCCACAG		CTGTGGGA	G	GTAAAATA
3980	TTCAGTAT	GGCTAGCTACAACGA	TTTACTCC		GGAGTAAA	A	ATACTGAA
3982	TATTCAGT	GGCTAGCTACAACGA	ATTTTACT		AGTAAAAT	A	ACTGAATA
3987	TCATATAT	GGCTAGCTACAACGA	TCAGTATT		AATACTGA	A	ATATATGA
3989	ACTCATAT	GGCTAGCTACAACGA	ATTCAGTA		TACTGAAT	A	ATATGAGT
3991	AAACTCAT	GGCTAGCTACAACGA	ATATTCAG		CTGAAATAT	A	ATGAGTTT
3995	TGAAAAAC	GGCTAGCTACAACGA	TCATATAT		ATATATGA	G	GTTTTTCA
4003	TTCAAAAC	GGCTAGCTACAACGA	TGAAAAAC		GTTTTTCA	G	GTTTTGAA

Seq1 = TERT (Homo sapiens telomerase reverse transcriptase (TERT) mRNA, 4015 bp), Nakamura et al., Science 277 (5328), 955-959 (1997)

Cut Site = R/Y (Purine/Pyrimidine)

Stem Length = 8 , Core Sequence = GGCTAGCTACAACGA

Table VII: Anti-TERT HH and G-Cleaver Ribozymes

Alias	Ribozyme Sequence	Length (nt)
HH		
TERT-1051	AGGAGUA CUGAUGAGGCCGUUAGGCCGAA AGGAAGU	36
TERT-1053	UGAGGAG CUGAUGAGGCCGUUAGGCCGAA AGAGGAA	36
TERT-1918	UGAAGCG CUGAUGAGGCCGUUAGGCCGAA AGUCUGG	36
TERT-2383	GAGCCAC CUGAUGAGGCCGUUAGGCCGAA AACUGUC	36
TERT-2485	UGAAGCG CUGAUGAGGCCGUUAGGCCGAA AGGAAGA	36
TERT-2566	GCGUGGA CUGAUGAGGCCGUUAGGCCGAA AGGAUGG	36
TERT-3181	AGUAGCA CUGAUGAGGCCGUUAGGCCGAA AGGGAGG	36
TERT-3691	CUGUGGG CUGAUGAGGCCGUUAGGCCGAA AAGUGAA	36
TERT-3758	AUGUGGG CUGAUGAGGCCGUUAGGCCGAA AGUGGAA	36
TERT-3794	GGUGAAC CUGAUGAGGCCGUUAGGCCGAA AUGGCGA	36
G-Cleaver		
TERT-757	UUGGG UGAUGGCAUGCACUAUGCGCG AACGGCAGAC	36
TERT-2353	UCUGU UGAUGGCAUGCACUAUGCGCG AAGGUAGAGA	36
TERT-3795	GUGAA UGAUGGCAUGCACUAUGCGCG AAUGGCGAAU	36